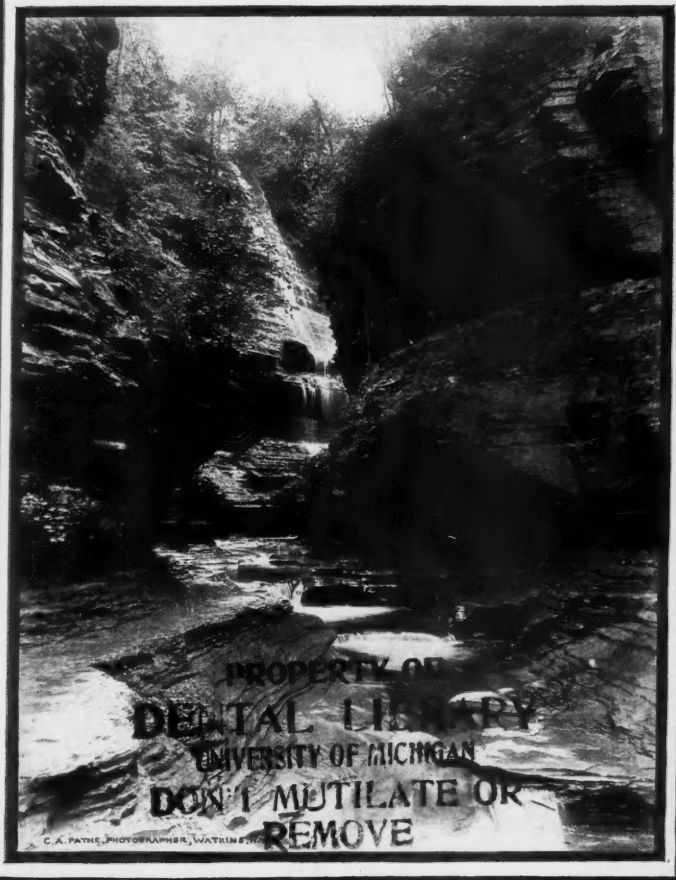
THE DENTAL DIGEST



OCTOBER – 1925

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GEORGE WOOD CLAPP, D.D.S.

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CONTENTS

VOL. XXXI OCTOBER, 1925 No. 10

CONTRIBUTED ARTICLES	PAGE
An Accurate Method of Impression-Taking for Lingual Bar Cases, ERVIN S. ULSAVER, D.D.S.	667
A Meeting to Make Better Dentistry Practical	673
The Principles and Practice of Administering Nitrous Oxide-Oxygen and Ethylene-Oxygen	674
The Oral Diagnosis of Systemic Disturbances . WM. G. DOWNS, JR., D.D.S.	678
Dentists' Notices of the Revolutionary Period . H. H. MANCHESTER	687
Paul Revere's Horse . . . . . DR. F. C. MOORE	693
Some Fundamental Features Involved in the Evolution of the Human Skull and Dentition . . . . . JOSEPH H. KAUFFMANN, D.D.S.	694
The Relation of Nutrition to Preventive Dentistry, ROBERT H. ROSE, A.B., M.D.	699
Dr. Morinosuke Chiwaki Honored by an American University	704
A College Education and Its Relation to Dentistry, PHILIP NEMOFF, D.D.S.	708
Why a Dental Assistants' Association? . EDWARD L. MITCHELL, D.D.S.	711
Togo's "Discursions"	717
The Status of Dental Education	719
Death of Dr. James F. Gilbert, M.D., D.D.S.	725
The American Stomatological Association and the Stomatological Section of the American Medical Association	727
Dental Laws . . . . . ALPHONSO IRWIN, D.D.S.	729
PRACTICAL HINTS	733
CORRESPONDENCE	738
DENTAL SECRETARIES AND ASSISTANTS	741
EXTRACTIONS	745
FUTURE EVENTS	746

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THE DENTAL DIGEST

GEORGE WOOD CLAPP, D.D.S., EDITOR

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OUR COVER THIS MONTH

Watkins is a county-seat village situated on Seneca Lake in the central portion of New York State. In recent years it has become a very interesting spot for tourists and summer visitors. The surrounding region has many important natural industries, among them being a number of large vineyards, but one wonders "what's the use" of growing grapes nowadays! Watkins Glen, said to be one of the wonders of the new world, is the principal attraction of the place. It is a deep, winding cleft in the rocks, ranging from 100 to 300 feet deep, traversed by a tumbling stream fed by springs 1000 feet above the entrance to the Cascade.

Our COVER PICTURE shows a part of this charming natural formation known as the Glen of the Pools. Rainbow Falls and the Triple Cascade are at its upper end, and from a point back of the spray beautiful rainbows can be seen in the afternoons during the summer season. Besides its natural attractions this vicinity is famous in historic legends of Revolutionary times. It has a pleasant climate, good roads, modern hotels and excellent railroad facilities.

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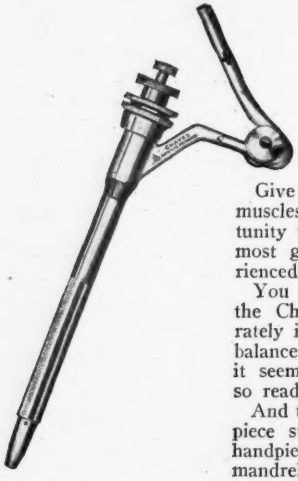

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Vol. XXXI OCTOBER, 1925 No. 10

An Accurate Method of Impression-Taking for Lingual Bar Cases

By Ervin S. Ulsaver, D.D.S., New Rochelle, N. Y.

The following technic, once mastered, is more quickly performed than would appear from the length of the description necessary to make it plain. It has proved very satisfactory in practice because most of the plates made by it have needed no attention, and for the others the adjustments have been very slight.

Fig. 1

Suppose that a lower lingual bar plate is to be made for a case in which both lower cuspids and three of the four lower incisors are present. All the teeth posterior to the cuspids and one incisor are to be replaced.

Select a lower impression tray of about the right size. Cut away the labial and buccal walls and shape the rest of the tray by bending to a satisfactory fit. This tray should not extend far back on the ridge because it is intended to take with it only the impression of enough

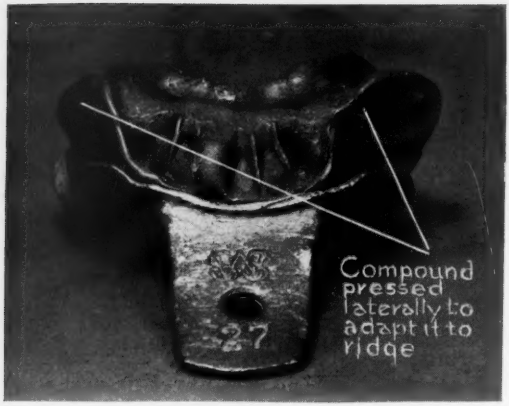


Fig. 2

ridge to permit making the lingual bar, including the loops which extend posterior to the cuspids and to which the vulcanite is to be attached.

Soften enough modeling compound to make a roll which would nearly fill the tray if the outer walls had not been cut away. Put the roll in the tray, temper it in hot water and place the tray in the mouth far enough back of the teeth so that the front of the compound does not touch the cuspids. Pull the tray horizontally forward until the compound comes into firm contact with the teeth and ridge and until the front of the compound is even with the incisal edges of the teeth. Press the heels of the tray downward toward the ridge in such way as to ensure a good impression of the gum below the teeth, the lingual surfaces of the teeth (including the cuspids) and enough of the ridge

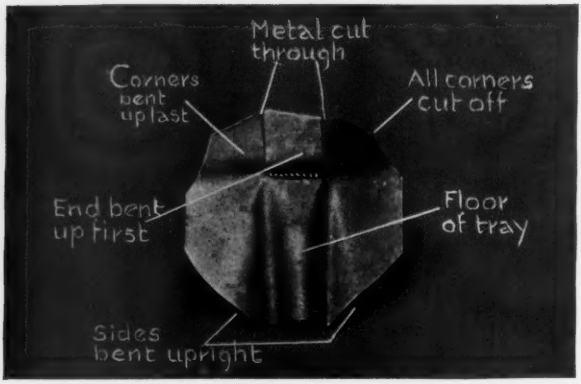


Fig. 3

distal to the cuspids to permit making the loops at the ends of the lingual bar plate. To ensure a good impression of this part of the ridge, with the fingers press the compound, while it is soft, down upon the ridge posterior to the cuspids.

It is desirable to obtain a separate impression of each cuspid with the undercuts. A special tray to facilitate taking these impressions can be made in a minute. Take a piece of sheet brass or copper or German silver about 1½ inches square, 30-gauge. Cut it clear through at the solid lines in Figure 3 and bend it at the dotted line. When the long sides are bent at right angles to the middle section and the shorter ends are bent up somewhat like the ends of a pasteboard cracker box, a narrow, deep tray with one end open and flexible sides is ready for use. Spread the long sides a little apart so that the tray will be partly open. Fill the tray with plaster of Paris or compound, which chills

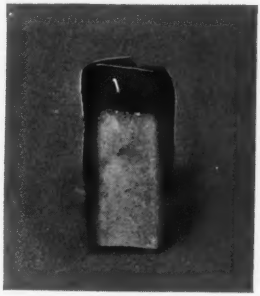


Fig. 4
Metal shown in Fig. 3, bent to form tray.

in ice water, so that it will break. Hold the tray above the teeth, with the long diameter along the teeth and the closed end distal to the cuspid of which an impression is to be taken. Carry the tray downward about the cuspid and adjoining teeth, and when it is down to place, press the long sides together in such way as to drive the plaster or compound into the undercuts and spaces between the teeth. If plaster is used, be sure that the tray is dry when the plaster is put into it. If compound is used, heat the tray before the compound is put in, to make sure that the compound will stick to it when cold.

To remove the tray from about the teeth, place the end of the finger under the long side of the tray to the labial of the teeth and pull upward and outward. This spreads the tray and breaks the impression. With this technic it is usually necessary only to squeeze the sides of the tray together again to have a complete impression. Take the impression of

each cuspid separately in this way. From these impressions models are made, over which the clasps are shaped.

When the lingual bar has been made on the model from the impression taken for that purpose and the clasps have been made on the models of the cuspids from the small impressions, put the lingual bar and one clasp in place in the mouth and fix their relative positions with a small plaster impression. Pour this impression with soldering investment material and solder that clasp to the bar. Put the bar with the attached clasp in position in the mouth, put the other clasp in place, and fasten and solder it in the same way. This may seem like taking unnecessary trouble, but it so accurately establishes the relations

Fig. 5
Impression of rim taken on one side.

between the bar and the clasps that it has proved well worth the extra care.

Use the lingual bar, as thus made, as a tray to take the impression for the vulcanite portions of the plate. Soften the end of a stick of compound over a flame until it can be formed into a ball. Heat one loop of the lingual bar plate in the flame until it is hot enough to burn itself into the ball of compound. This is important because it prevents the compound impression which is to be taken from changing its position with relation to the lingual bar. Burn the lingual bar into the compound, carry the lingual bar with the compound into place in the mouth, and with the fingers shape the compound over the ridge on that side until it takes the impression of the ridge as shown in Figure 5. Chill, remove from the mouth, then do the same on the other side, being

Fig. 6
Bite roll shown on one side.

careful not to affect the side already fitted. When the impression of the ridge is finished on both sides, form a roll of soft compound long enough to reach from the cuspid to the back end of the impression and big enough to serve as a bite rim. Attach it to the upper side of the compound, which forms the impression of the ridge. Do the same on the other side and cause the patient to bite the upper teeth into both rolls while they are soft, thus taking the bite. (Fig. 7.) Complete the impression for the whole model in sections after the manner illus-

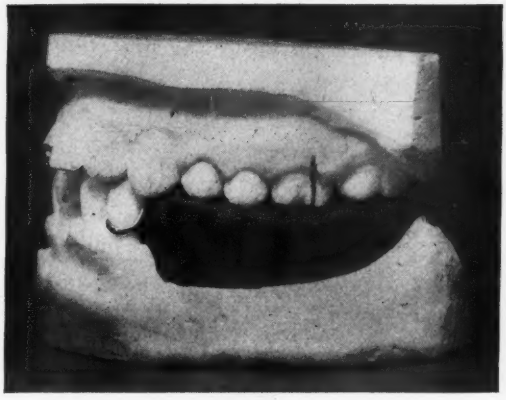


Fig. 7

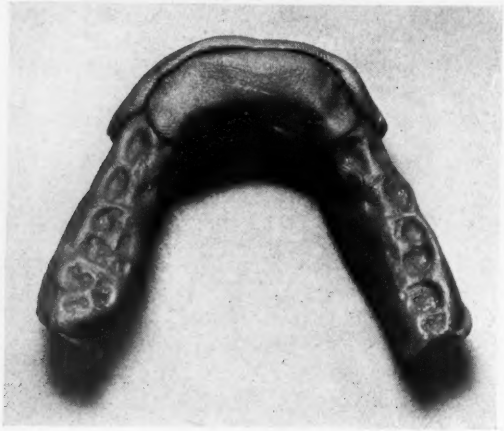


Fig. 8
Impression as it would appear in the mouth.

trated in Figure 8. Place in the mouth the bar as so far completed; soften a small amount of compound; lay it along the lingual surfaces of the teeth above the bar, from the occlusion rim on one side to that

Fig. 9
Parts of the sectional impression.

on the other; and let it come as far forward as the incisal edges of the teeth. Press it firmly into place. Soften another piece of compound and apply it to the labial surfaces of the teeth from the occlusion rim on one side around to the occlusion rim on the other. Press it firmly into place, letting it meet the other impression at the incisal edges of the teeth. When the pieces of this impression are removed, they will appear as in Figure 9.

Box the final impression with boxing wax and pour the model with stone. When the model is hard, remove the impression sections, being careful not to distort the occlusion rims back of the cuspids.

Make an upper model, mount both models in an articulator, and arrange the teeth in the usual manner.

Professional Building.

A Meeting to Make Better Dentistry Practical

It is difficult for most dentists to apply much of the best scientific information as it is generally presented in meetings. They and their patients are serious losers.

The First District Dental Society of New York proposes to devote its December meeting to the application of science to practice. There will be no finely-spun theories and no effort to develop new knowledge. We are going to find out how to use at the chair what we think we already know.

If this interests you, plan to come!

All sessions and clinics are to be held at Hotel Pennsylvania, New York, December 2, 3, 4, 1925. Write now for reservations. For further information, address E. M. Davies, General Secretary, First District Dental Society of the State of New York, 250 West 57th Street, New York, N. Y.

The Principles and Practice of Administering Nitrous Oxide-Oxygen and Ethylene-Oxygen*

(*Ninth Article*)

Premedicating and Restraining Patients

The anesthesia range in all patients is widened by premedication. It is not especially needed in any except the difficult types, but in these types it is always helpful and for the extreme examples of these types it is necessary if anesthesia is to be successfully induced and maintained.

With proper premedication practically all patients may be anesthetized in the usual time, and a quiet and comfortable anesthesia may be maintained in the usual manner. The degree of premedication should correspond as nearly as possible with the degree of difficulty anticipated. For instance, in the case of athletic or excitable patients, with no known complications, premedication may be less than in the case of a moderate alcoholic, and for the moderate alcoholic it may be less than for the pronounced alcoholic or drug addict. It is better to give more than the exact amount of premedication required than to give less, provided always that the dose remains within the accepted dosage for the drug used.

If more than the required amount of premedication is given, the induction period may be slightly shortened because of the increased susceptibility of the patient, or he may require more oxygen during the carrying period, sometimes up to 20%. Premedicated patients make good recoveries, but sometimes a little slower than non-premedicated patients.

Morphine is doubtless the best premedicant we have, because it is the greatest metabolic inhibitant. The average dose is 1/4 grain for men and 1/6 grain for women, to be given hypodermically an hour before the time for the anesthesia. The morphine-atropine combination is preferable to morphine alone because the atropine dries up the secretions so that there is less likelihood that mucus will get into the throat to interfere with breathing.

Some dentists and patients prefer non-narcotic drugs. In such cases chloretone may be given. It is a very agreeable drug to take and there are no undesirable effects from the accepted dosage.

Chloretone is slightly anesthetic locally and reduces the irritability of the lining membrane of the stomach and the tendency to nausea. It is also a marked psychical inhibitant, and patients of the excitable type or those fearful of the operation, who might otherwise give the anesthetist considerable trouble, will usually come in quietly and submit

* This series of papers is based on a clinic given before the Florida Anesthetists' Society at Orlando, Florida, December 17, 1924, by J. S. Heidbrink, D.D.S., Minneapolis, Minn.

to the anesthetic in a normal manner. So marked are the benefits of this psychical inhibition from chloretone that dentists are finding its use advantageous in tedious or painful operations not requiring an anesthetic, such as grinding a tooth for a crown or cavity preparation. The accepted dosage is from 5 to 20 grains given by mouth an hour before the time for the anesthetic, the exact quantity depending upon the degree of difficulty anticipated.

Alanol is one of the newer premedicants, and favorable reports of it are made. So far as is known, it is put up in tablets of only one size. The dose is from 1 to 3 tablets an hour before the anesthesia.

Doubtless an hour is required to permit the maximum effects from morphine, chloretone and alanol. When the circumstances do not permit waiting an hour, beneficial effects will be obtained in from 30 to 45 minutes. If the maximum effect is desired in 15 minutes, veronal, which acts quickly, may be used.

Strapping Patients During Anesthesia

The difficult types of patients are better controlled during the induction and maintenance of anesthesia by the use of a strap than without it. Because it is impossible to tell in advance just what patients will give trouble, it is better to strap all male patients immediately after the beginning of the induction. Women who can be recognized as difficult types, or who are so large that if they slide down in the chair it will be difficult to return them to position, may also be strapped. Any patient who gives trouble by such movements as raising the arms or struggling should be strapped.

The strap should be applied immediately after the beginning of the induction. If it is done with a reasonable degree of care, patients do not seem to be conscious of it either at the time or after they awaken, and few ever mention it. None protests against it.

The best strap is a web trunk-strap ten feet long with an automatic buckle which will stop in any position. The strap should be rolled, beginning at the end without the buckle in such manner as to bring the outside of the buckle on the outside of the roll. The strap thus rolled should have a definite place in the cabinet, easily accessible, and should be always in that place ready for instant use.

To apply the strap, grasp the roll in the right hand just behind the buckle. Drop the roll, except the buckle end, and allow the strap to uncoil. Reach the right hand, which holds the "neck" of the strap, with the buckle right side up, across in front of the patient, outside of both arms just above the elbows. Continue this motion of the right hand around to the lever on the back of the chair.

Pass the left arm around the left side of the chair and take the buckle from the right hand in such way that the outside of the strap

is in contact with the palm of the left hand and the buckle projects a little beyond the little finger. Make sure that the strap passes under the lever of the chair.

With the left hand bring the buckle around in front of the patient to a point just inside the right forearm, without changing the position of the strap or buckle in the left hand. Bring the right hand back around the patient to meet the left hand, but do not let go of the strap with the right hand. In making this motion, let the strap slip through the right hand in such way as to maintain some tension upon it.

The grip on the strap with the left hand is maintained by the third and fourth fingers of that hand, and the thumb and first two fingers are slightly opened. Pull the right hand across the left hand in such way that the portion of the strap between the right hand and the patient is brought under the thumb and first two fingers of the left hand, which are to be immediately closed down upon it. Hold both parts of the strap firmly with the left hand. Release the grip of the right hand upon the strap and with that hand pass the free end of the strap through the buckle, which still projects beyond the little finger of the left hand. Retain the grasp of both portions of the strap with the left hand until all the slack has been taken up. The portion of the strap immediately external to the buckle is pushed across in front of the patient with the right hand in such way as to take up the slack, and the grasp by the left hand is gradually released in such way that there is, at no time, any slack in the portion of the strap about the patient.

Care should be taken that the strap crosses the arms just above the elbows and below the biceps. The amount of tension put upon the strap at any time will depend upon whether the patient is quiet or is struggling. So long as the patient remains quiet, the tension on the strap is sufficient merely to take up the slack. If the patient struggles, it is easy to reach under the apron and pull the strap tight. If there is any question in the anesthetist's mind that the patient may develop excitement, it is well to tighten the strap at about 1 minute 20 or 25 seconds from the beginning of induction. At this time the patient will not be conscious of the tightening.

The technic of strapping so far described guards against arm movements by the patient or getting out of position, but it makes no provision for controlling leg movements, and it is to permit control of leg movements that the extra length of strap is provided. If the patient begins leg movements, the free end of the strap is passed directly forward from about the center of the patient's body to a point just above the knees. It is then passed outside the left knee, beneath both knees and up and around the right knee so that the free end may be passed over, around and back under the standing portion of the strap with the end pointing slightly toward the knees. Pull the strap tight. Pass

the end of the strap toward the patient over that part of the strap which crosses the right knee, and then pass the end of the strap under the portion of the strap between the body and knees, around the strap and through the loop to the right. Pull it tight. The proper position of that part of the strap which encircles the legs, when this operation is finished, is slightly above the knees.

Some dentists are inclined not to strap patients because they fear it will make unfavorable impressions upon them. Dr. Heidbrink's experience is that, if it is done in the manner which has been described, it does not make an unfavorable impression. On the rare occasions when patients mention the strap it is easy to explain that the strap is for the protection of both patient and operator because some patients have dreams and make movements which interfere with the operation, that if the patient should slide out of the chair he might be injured, or that he might make arm movements and be injured on a glass.

The feeling of security on the part of the operator which arises from the knowledge that the most disastrous things that can happen under nitrous oxide will be avoided, and that he is in position to control patients regardless of what develops, is ample justification for the liberal use of the strap.

The strap should not be removed until the patient resumes conscious control because some of the most harrowing dream situations arise just before the patient resumes conscious control. This is particularly true of patients of the difficult types.

(*To be continued*)

The Oral Diagnosis of Systemic Disturbances*

By William G. Downs, Jr., D.D.S., Evansville, Ind.

(*Continued from September*)

Rationally coming in the same classification as dentition is the great class of troubles arising from the eruption, so often abnormal, of the third molar, particularly the mandibular. Under the heading of ills arising from this condition, we are all so familiar with most of them that it is scarcely necessary to dwell on them. It is my desire, however, to accentuate certain of them in a very definite manner. Headaches, neuralgias, neuroses, eye disturbances, disturbances in the middle ear, rheumatic conditions, particularly of the neck and shoulders, temporomandibular arthritis, all come in for their share of attention and are all more or less familiar as symptoms pointing to possible disturbance from third molar impaction. It is, likewise, not so unusual to find the same train of symptoms from the impaction of other teeth, notably cuspids. These symptoms in themselves may give origin to a longer and yet more serious train of confusing systemic disturbances. For instance, a patient may have what is in itself only a minor neurotic condition, at least apparently so, and have, as secondary to that, mental disturbance, insomnia, loss of appetite and a consequent malnutrition, and even what may be *apparently* pernicious anemia. In fact, the end result of almost any bad impaction, if not corrected reasonably early, is almost certain to be some or all of these conditions. The x-ray offers a ready and reliable check when such a condition is to be at all suspected. The possibility which I have just outlined is but one of the innumerable others which you gentlemen with your experience and knowledge can multiply almost to infinity.

In this connection I wish to call attention to the work that is being done in the institutions for the insane along certain of these lines. Dr. Henry A. Cotton of the New Jersey State institution has probably been the country's leader in work of this character. To begin with, at that institution, all patients admitted after thorough examination have every even suspected cause of focal infection, oral or otherwise, removed. Likewise, every infection, whether or not there be a definite connection between it and the patient's mental condition, is removed. Some of the results obtained are nothing short of phenomenal. My own work in the Southern Indiana Hospital for the Insane, through a careful record system, has convinced me of the fact that a great many of the cases diagnosed as insanity, especially of the maniac type, are in reality only neuroses brought on by nerve pressure from an

* Read before the Green River Dental Society of Kentucky at Owensboro, May 14, 1925.

impacted tooth or teeth. It is indisputably true that a great number of such cases, as well as some apparently definite praecox cases, are definitely improved and not infrequently cured shortly after the removal of such offending teeth. As evidence of this fact I wish to cite the two following case records:

Case No. 1

Nov. 30, 1924—Female, aged 20

History. Patient in hospital for two years. History of definite psychoses for two years prior to admission. At onset physical condition excellent, but throughout period of mental disturbance gradually lost weight and general condition deteriorated.

Examination. Lower third molars both badly impacted; some evidence clinically of inflammatory condition. March 10, 1925—Upper third molars fairly well erupted, lower impactions progressing; LL8 particularly bad; unusual nervous symptoms with severe pain on left side of face and head.

Treatment. March 10, 1925—LL8 extracted surgically under ether. Necessary to extract LL7 and chisel away portion of ramus to reach same. March 17, 1925—Noticeable amount of infection and purulent discharge present. Inserted drainage and prescribed Carrel-Dakin solution wash t.i.d. March 31, 1925—Large slough of bone tissue extracted from orifice. Infection decidedly worse, prescribed Mercurochrome-220 in 5% solution applied every two hours. Recommended thorough systemic lavage.

Progress. April 8, 1925—Infection considerably allayed, nervous symptoms and headaches gone, patient's mental condition considerably improved. May 8, 1925—Site of operation clean and well healed. Patient's mental condition improved to sufficient point so that she was furloughed indefinitely.

Remarks. May 8, 1925—Recommended to patient's guardian that remaining impaction be immediately removed; as result of cleaning up the dual impaction, a complete cure and discharge of patient expected.

Case No. 2

Jan. 9, 1925—Male, aged 22

History. Patient at institution since January, 1924. Definite psychoses three years previous to admission. Gradual

deterioration of physical condition throughout period of mental disturbance.

Examination. Both lower third molars badly impacted with definite rarefaction at apices.

Treatment. January 9, 1925—Both lower third molars extracted under ether, drainage inserted in sockets saturated with Mercurochrome-220 in 2% solution.

Progress. No post-operative infection and but little pain. Wounds healed nicely with simple use of Carrel-Dakin wash.

Results. April 22, 1925—Patient furloughed from institution with apparent complete restoration of normal faculties.

Remarks. Unquestionably a case of psychiatry caused by pressure from progressive impaction on fifth nerve.

You will see from these records alone—and I can produce an infinite number of other similar ones—that there can be no question as to the connection between the two conditions.

Let us pass now to the great and much argued question of focal infections. There has been so much written and said on this subject in recent years that I truly hesitate to approach it. However, the work of Rosenow, Bloodgood and a great many others of similar ability has definitely proved that there is a certain connection between foci and infections elsewhere in the body. These other processes include a long and imposing line—arthritis, nephritis, carditis, lymphangitis, cystitis, and, in fact, almost every "itis" to which the body is heir—has been laid by someone to focal infections in the mouth and tonsils. Unquestionably, many of these conditions frequently do have their origins in one of these locations. We have all seen a great many cases of one or the other of these conditions respond almost miraculously to removal of infected teeth or tonsils, or both. These cases are too frequent to require enumeration here. I should like, however, to call your attention to the following case records as being ones which show results almost miraculous in their efficiency and speed:

Case No. 3

Dec. 23, 1922—Female, aged 63

History. Illness of three years' duration under observation of physician. Phlebitis most pronounced condition. Gradual increase of blood pressure over entire period with increasing arrhythmia; bed-ridden for three months; almost entirely helpless for four or five weeks. Extremely nervous until few weeks prior when semi-stupor resulted. Kidneys out of function; entire system subnormal.

Examination. All of teeth broken down, abscessed, and peridental tissues deeply inflamed. Blood Pressure—S-210, D-155. Heart—distinct arrhythmia with diastolic murmur. Respiration—light, quick and irregular. Temperature—variable from 97-1/5 to 98. Severe pains in legs with vessels swollen; almost no control of muscles over entire body. Microscopic, WBC extremely high, and high in polys.

Treatment. Took the risk of ether and made full mouth extraction. Did not pack or stitch wounds, applied very loose chlorazene tampons to ridges with instructions to change as often as needed.

Progress. December 24th—Patient resting easy. December 25th—Patient resting easy. Propped up on pillows. December 27th—Patient sitting up in chair, WBC only slightly high, polys normal.

Results. January 26, 1923—Patient came to office. Following findings: Blood Pressure—S-172, D-122. Heart—still some murmur but fairly regular. Respiration—apparently normal. March 15, 1923—Made dentures for patient. Doing all housework; normal except slight heart sound and pressure of 145-95.

CASE NO. 4

JAN. 10, 1925—FEMALE, AGED 40

History. Definite progressive psychoses over period of probably twelve years. Physical condition retrograding in parallel. Chief feature, marked nephritis with loss of weight.

Examination. Number of non-vital teeth found with sufficient clinical evidence of numerous abscesses to support x-ray findings.

Treatment. Extraction under nerve block of all suspicious teeth (11), leaving drainage in worst sockets. Had attendant apply Mercurochrome-220 in 5% solution t.i.d.

Progress. Feb. 12, 1925—Mouth well healed and some apparent gain in weight. Noticeable improvement of nephritic disturbance.

Results. April 27, 1925—Patient furloughed on mental condition. 21-pound gain in weight. Kidneys in normal function.

But how about the cases that have run the whole gamut of removal and drainage? Teeth, tonsils, sinuses, appendices—and yet conditions do not improve! It may be, of course, that in many cases the primary infection has run so long that the secondary ones have themselves

become chronic and passed the point where a complete cure is possible. It is not always the case, but I am at present convinced that in many cases which we see the shoe is on the other foot. The infection of teeth or tonsils, especially teeth, because that is of prime interest to us, instead of being primary is secondary to infection elsewhere. I know that I have seen teeth showing no sign of decay, no surrounding soft tissue involvement, no traumatic occlusion, in short no local causative factors, show definitely rarefied areas on radiography and definite abscesses upon removal. Some of these, after laboratory examination, will show bacteria identical with those of an old kidney or other lesion. Quite frequently such abscesses will be completely sterile, showing pus, leucocytes, broken-down tissue and blood cells, lymph, blood serum, in fact almost everything possible, except bacteria.

The logical conclusion upon such findings is that the infection primary is elsewhere and that because of some reason as yet unknown to us, possibly an inherent weakness of these tissues, the toxins from that infection are deposited at the roots of or around the necks of certain teeth. This may be seriously considered as an important etiological factor in certain types of periodontoclasia. It is certain in my mind that this condition or these possible conditions can mean but one train of activity. The nephritic or other similar condition may have at some time been secondary to some other focal infection. However, as far as this class of oral infections is concerned, it may be considered only as a primary infection. At any rate, the usual sites upon which both dentist and physician have been always ready and anxious to "throw off" have not always been to blame and are themselves frequently innocent sufferers from the guilt of some other organ or organs.

Let me here cite more case records, one (Case No. 5) from my private practice, the other two (Cases Nos. 6 and 7) again from the Southern Indiana Hospital for the Insane.

Case No. 5

Dec. 16, 1924—Female, aged 32

History. General health normal except for serious nervous breakdown following childbirth on June 24, 1924. Recovery from same slow. Some neurotic tendency from then to date with neuralgic pain over entire left side of face and head.

Examination. LL6 and 7 definitely abscessed, no fillings in same. No peridental infection, surrounding tissues normal; no apparent malocclusion.

Treatment. Extracted LL6 and 7 under nitrous-oxide-

oxygen anesthesia. Microscopic examination of matter from apices revealed no bacteria but a plentiful amount of WBC.

Progress. March 15, 1925—Patient reports complete absence of pain after third day following extractions. Likewise neurotic condition apparently absent.

Case No. 6

Dec. 12, 1924—Male, aged 60

History. Patient for four years. Never violent but very nervous and constantly disturbed. Gave history of severe headaches for number of years with obstinate cystitis of gonorrheal origin antedating other symptoms. Microscope showed only staphylococci at present in specimen of centrifuged urine.

Examination. UR6 and 7 definitely abscessed with some possibility of malocclusion; otherwise normal.

Treatment. Extracted UR6 and 7 under block. Considerable necrotic bone in this region which it was necessary to curette. Microscope revealed smear of staphylococci of same appearance as those in centrifuged specimen; not cultured, however.

Progress. March 7, 1925—Mouth healed nicely, headaches gone, mental condition sufficiently improved so that patient indefinitely furloughed. Cystitis apparently unchanged.

Case No. 7

Jan. 22, 1925—Male, aged 57

History. Patient in hospital ten years. Definite unchanging psychoses, old case of gonorrheal rheumatism. Recent history of headaches and fullness in right side of face.

Examination. No opposing teeth, some swelling and tenderness in right side of upper arch. One first molar in situ in this quadrant. Right cheek sensitive. Dull pain in right orbit. X-ray revealed right antrum severely involved.

Treatment. Extracted UR6, made clean opening size of socket into antrum, inserted drainage soaked in Mercurochrome 220-2%. A considerable amount of pus exuded on perforation. Smeared and examined same, several smears including dark field. All negative for bacteria; continued changing drainage for 10 days when same showed sterile. Allowed to heal. No complications to date.

Progress. April 10, 1925—Soreness in face and head-

aches gone. Mental condition unchanged. Arthritic conditions unchanged.

I sincerely hope to see more, wider and deeper research along these lines in the near future. The dentist and "oralogist" have been the "goats" in obscure infections long enough. It is quite true that frequently they have been guilty of poor methods, poor technic and unscientific diagnosis, but on the other hand they have quite often borne the brunt of faulty diagnostic methods or a lack of complete knowledge on the part of internist or surgeon.

Before passing on to the class of conditions which show symptoms for the dentist's recognition but not oral manifestations per se, I wish to bring your attention to the not infrequent appearance of malignant tumors in the oral cavity. Let it suffice that every growth, of whatever character, which is found in the mouth should be under direct suspicion for malignancy. We may, of course, somewhat strengthen our suspicions by the clinical findings, that is, the history of the case, the indurated character of the growth, its rapidity, response to sensation and all of the other well-known symptoms. However, the only safe course to follow with these growths is either, if your suspicion is very strong and if they are not so located as to be safely susceptible of sectioning, to treat them as if known to be definitely malignant, with x-ray and radium; or, if they may be sectioned without danger of adjacent contamination, to do so and have them examined by a pathologist of unquestioned ability and integrity. My point is that these malignant tumors have in them the elements of such grave danger that any sort of temporizing whatever is nothing short of criminal on the part of either oralogist or general surgeon.

Case No. 8

Feb. 10, 1923—Male, aged 57

History. Gave history of extractions in upper left quadrant about two years prior for abscesses, supposedly. Three or four months later noticed considerable soreness in that region, went to dentist who said there was necrotic bone which needed curetting. He did this operation, and the patient noticed temporary improvement. However, some several months later there was a recurrence when the patient had an x-ray made of this locality and again dentist informed him that the antrum walls were necrosed and again opened and curetted. Patient experienced temporary relief but in few months condition recurred, this time accompanied by a bulging of left eye. Reported to oculist, who could find no organic lesion in eye. Then, becoming alarmed, reported to family physician who referred case.

Examination. Left eye protruded with double vision. Considerable swelling in left superior maxilla. Arch on this side thickened, light in color and apparently insensitive completely. Marked induration around same. Marked nervous syndrome. On microscopic examination of section removed with utmost care as to contamination, reported small spindle celled sarcoma of very virulent type.

Treatment. Patient given deep therapy, 250,000 volts for 7 hours and 120 mg. radium 4 hours; same dose repeated in three months.

Progress. After first deep therapy marked erythema and loss of hair over entire side of head. By the time patient recovered from erythema nervous symptoms gone, double vision almost gone, swelling and inflammation disappeared. After second dose patient apparently normal.

Results. Patient died Nov. 24, 1923, from gastric disturbance, not of tumor origin.

Case No. 9

Nov. 10, 1923—Female, aged 37

History. Patient presented for oral examination and operative attention prior to confinement. In making routine examination, noticed a small soft and almost colorless growth protruding from between upper right first and second molars. History of gradual growth for about a month previous, no pain, no bleeding; growth what the patient termed "proud flesh," however, suspicious in appearance.

Examination. Carefully sectioned, covering wound with flexible collodion. Pathologist reported lympho-sarcoma.

Treatment. Referred case to deep therapist, but patient wanted to see family physician in Chicago.

Progress. Chicago man on clinical findings decided growth not malignant. Referred patient to oral surgeon there who concurred in opinion and excised growth. Dec. 12, 1923—Patient admitted recurrence of growth but still refused deep therapy on advice of family physician. August 24, 1924—Saw patient and examined mouth. Probably twenty similar growths over mouth, but patient still confident growth benign. April 25, 1924—Examined patient, more growths present, loss of weight, typical cachexia and enlarged cervical glands. Patient now willing to proceed with deep therapy but too far advanced to be worth while. Case hopeless.

In closing, there are certain purely symptomatic conditions which arise within the ken of the dentist or the oralogist. Most of us, if we are keeping up reasonably well with scientific developments, as published in the current literature, know what these symptoms are. However, our haste to get at what is frequently more remunerative—restorative work—frequently causes us to overlook these conditions. There is one outstanding symptom in this class that we see very frequently but do not always recognize, the well-known "acetone breath" of nephritic origin. This occurs early in kidney disturbances, and frequently an early diagnosis and reference on the part of the oralogist would save the patient years of life as well as the years of extreme discomfort and cost incident to a chronic diabetes. Besides this, there are all of the discolorations of the various metallic poisonings, the various shadings in color of the anemias, the swollen and creased tongues of the pernicious infections, as well as many other conditions with which we are familiar.

In summarizing, let me accentuate the following features: the importance of diet, both in dentition and for the oral and systematic welfare of children and adults; the value of the microscope, x-ray and every other aid which science has given us in letting no possible detail confuse us for an absolutely accurate diagnosis of every condition, whether oral or systemic, which we meet. Last, but not least, let me as strongly as possible plead with you for the utmost in cooperation among the dentist, the technician, the physician and the surgeon. We need more accuracy on the part of each, first. But, secondly, it is more necessary for each to give all that he has in knowledge, training, experience and observation for the benefit of (1) his patient, (2) his colleague, (3) his profession, and (4) himself. If we do, in fact, avail ourselves of every detail in accurate diagnosis and give that, plus the height of cooperation, to our colleagues in both professions, then both professions will fulfil what is expected of them by the public, and the niche which is accorded them in the esteem of their fellow men will be the highest that it is possible for mankind to attain.

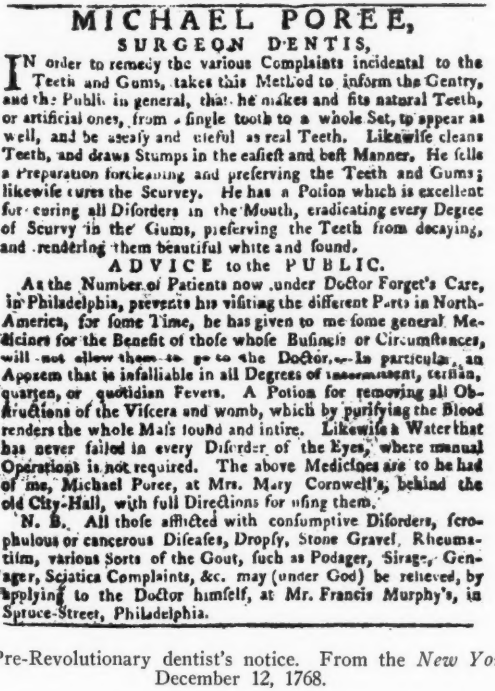
211 Boehne Bldg.

Dentists' Notices of the Revolutionary Period

By H. H. Manchester, New York, N. Y.

The announcements of the dentists in the United States immediately before and after the Revolution are of much interest, not only in disclosing the names of dentists, of whom otherwise we might never have learned, but also in giving us an insight into dentistry itself at that period.

From 1768 to 1773 Michael Poree, surgeon dentist, inserted occasional advertisements in papers in New York, Philadelphia and Boston. In his advertisement of December 12, 1768, in the *New York Gazette,*



MICHAEL POREE,
SURGEON DENTIS,

IN order to remedy the various Complaints incidental to the Teeth and Gums, takes this Method to inform the Gentry, and the Public in general, that he makes and fits natural Teeth, or artificial ones, from a ſingle tooth to a whole Set, to appear as well, and be as eaſy and uſeful as real Teeth. Likewiſe cleans Teeth, and draws Stumps in the eaſieſt and beſt Manner. He ſells a Preparation forticaſting and preſerving the Teeth and Gums; likewiſe cures the Scurvey. He has a Potion which is excellent for curing all Diſorders in the Mouth, eradicating every Degree of Scurvy in the Gums, preſerving the Teeth from decaying, and rendering them beautiful white and ſound.

ADVICE to the PUBLIC.

As the Number of Patients now under Doctor Forget's Care, in Philadelphia, prevents his viſiting the different Parts in North-America, for ſome Time, he has given to me ſome general Medicines for the Benefit of thoſe whoſe Buſineſs or Circumſtances, will not allow them to go to the Doctor.—In particular, an Apozem that is infalliable in all Degrees of intermittent, tertian, quarten, or quotidian Fevers. A Potion for removing all Obſtructions of the Viſcera and womb, which by purifying the Blood renders the whole Maſs ſound and intire. Likewiſe a Water that has never failed in every Diſorder of the Eyes, where manual Operation is not required. The above Medicines are to be had of me, Michael Poree, at Mrs. Mary Cornwell's, behind the old City-Hall, with full Directions for uſing them.

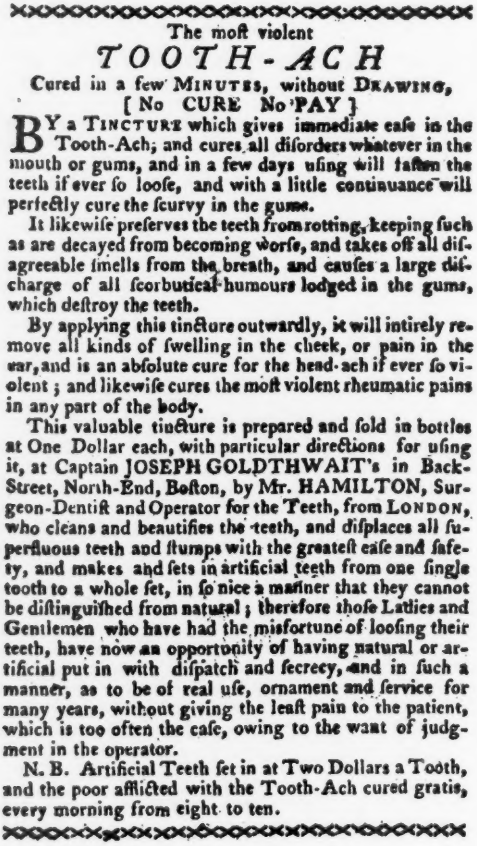
N. B. All thoſe afflicted with conſumptive Diſorders, ſcrophulous or cancerous Diſeaſes, Dropſy, Stone Gravel, Rheumatiſm, various Sorts of the Gout, ſuch as Podager, Sirage, Genager, Sciatica Complaints, &c. may (under God) be relieved, by applying to the Doctor himſelf, at Mr. Francis Murphy's, in Spruce-Street, Philadelphia.

Fig. 1. A Pre-Revolutionary dentist's notice. From the *New York Gazette,* December 12, 1768.

he announced in part: "Michael Poree, Surgeon Dentis, In order to remedy the various Complaints incidental to the Teeth and Gums, takes this Method to inform the Gentry, and the Public in general, that he makes and fits natural Teeth, or artificial ones, from a single tooth to a whole Set, to appear as well, and be as easy and useful as real Teeth. Likewise cleans Teeth, and draws Stumps in the easiest and best Manner." (Fig. 1.)

He also sold a preparation for the teeth and handled some medical preparations of Dr. Forget in Philadelphia. His own preparation for the teeth was intended to preserve the teeth and gums and to cure scurvy of the teeth, or probably what is today called pyorrhea.

The next year Mr. Hamilton likewise advertised in Boston and New York papers. The beginning of his "ad" read: "The most



The moſt violent

TOOTH-ACH

Cured in a few MINUTES, without DRAWING,

[No CURE No PAY]

BY a TINCTURE which gives immediate eaſe in the Tooth-Ach; and cures all diſorders whatever in the mouth or gums, and in a few days uſing will faſten the teeth if ever ſo looſe, and with a little continuance will perfectly cure the ſcurvy in the gums.

It likewiſe preſerves the teeth from rotting, keeping ſuch as are decayed from becoming worſe, and takes off all diſagreeable ſmells from the breath, and cauſes a large diſcharge of all ſcorbutical humours lodged in the gums, which deſtroy the teeth.

By applying this tincture outwardly, it will intirely remove all kinds of ſwelling in the cheek, or pain in the ear, and is an abſolute cure for the head-ach if ever ſo violent; and likewiſe cures the moſt violent rheumatic pains in any part of the body.

This valuable tincture is prepared and ſold in bottles at One Dollar each, with particular directions for uſing it, at Captain JOSEPH GOLDTHWAIT's in Back-Street, North-End, Boſton, by Mr. HAMILTON, Surgeon-Dentiſt and Operator for the Teeth, from LONDON, who cleans and beautifies the teeth, and diſplaces all ſuperfluous teeth and ſtumps with the greateſt eaſe and ſafety, and makes and ſets in artificial teeth from one ſingle tooth to a whole ſet, in ſo nice a manner that they cannot be diſtinguiſhed from natural; therefore thoſe Ladies and Gentlemen who have had the misfortune of looſing their teeth, have now an opportunity of having natural or artificial put in with diſpatch and ſecrecy, and in ſuch a manner, as to be of real uſe, ornament and ſervice for many years, without giving the leaſt pain to the patient, which is too often the caſe, owing to the want of judgment in the operator.

N. B. Artificial Teeth ſet in at Two Dollars a Tooth, and the poor afflicted with the Tooth-Ach cured gratis, every morning from eight to ten.

Fig. 2. Mr. Hamilton's notice. From the *Boston Gazette,* August 14, 1769.

violent Tooth-Ach Cured in a few Minutes, without Drawing (No Cure, No Pay)." (Fig. 2.)

For this purpose he used a tincture which he claimed would fasten the teeth and prevent them from decaying. He was, however, much

more than a producer of this tincture, for he advertised himself as: "Surgeon-Dentist and Operator for the Teeth, from London, who cleans and beautifies the teeth, and displaces all superfluous teeth and stumps with the greatest ease and safety, and makes and sets in artificial teeth from one single tooth to a whole set, in so nice a manner that they cannot be distinguished from natural." (Fig. 2.)

He assured ladies and gentlemen that they could have natural and artificial teeth put in with dispatch and secrecy, so as to be of real use for ornament and service for many years, without pain.

As a postscript he added: "Artificial Teeth set in at Two Dollars a Tooth, and the poor afflicted with the Tooth-Ach cured gratis, every morning from eight to ten." (Fig. 2.) Thus he seems to have started a free clinic in dentistry, one which was probably the first in the country.

Here we have two important pre-Revolutionary dentists, Poree and Hamilton, of whom almost nothing is known. Just when did they arrive in the country, and what was their subsequent history? At present we have no information on these points, though, as in the case of all Colonial dentistry, it is perfectly possible for further facts to turn up.

Another man who has sometimes been considered a dentist was Isaac Greenwood, Sr., but he was essentially a maker of mathematical instruments and a turner. It is true that he had a picture taken with Hunter's *Treatise Upon the Human Teeth* before him, and that he occasionally made an artificial tooth for some customer. But in the report of the Boston Massacre, March 5, 1770, where his apprentice, Samuel Maverick, was killed, Isaac Greenwood is spoken of as the "ivory turner." Nevertheless, even before the Revolution, he did enough dental work to interest his sons in the subject, and later several of them became professional dentists. After the Revolution he seems to have paid still more attention to dentistry, and in an advertisement in the *Massachusetts Centinel*, May 3, 1788, he calls himself a dentist, though at the same time advertising umbrellas, musical instruments, canes, ivory products such as chess men, billiard balls, and gums, and even electric treatment.

In dental work he advertised to clean the teeth, to fix natural teeth on plates of gold or silver and to substitute artificial teeth, for from two to six shillings each. (Fig. 3.)

By this time Paul Revere, who had been instructed in dentistry by Dr. Baker, considered himself a full-fledged dentist and advertised in the *Boston Gazette* of July 30, 1770, as follows:

"Paul Revere, Takes this Method of returning his most sincere Thanks to the Gentlemen and Ladies who have employed him in the care of their Teeth, he would now inform them and all others, who

are so unfortunate as to lose their Teeth by accident or otherways, that he still continues the Business of a Dentist, and flatters himself that from the Experience he has had these Two Years, (in which Time he

ISAAC GREENWOOD,

DENTIST,

ACQUAINTS the publick, that he has REMOVED from No. 49 to No. 19, Marlborough Street, oppoſite Meſſrs. AMORY'S Store, where he continues to perform the neceſſary branches of that art, carefully and faithfully. Removing every ſubſtance tending to deſtroy the Teeth and Gums. Cures the Scurvy in the Gums, makes the Teeth white, &c. Sells BRUSHES that are ſuitable for the Teeth, with a POWDER that never fails to recommend itſelf, at 1/4 per box. Fixes NATURAL TEETH on plates of gold or ſilver, with gold ſprings, if wanted. *Alſo*, ſubſtitutes ARTIFICIAL TEETH, of different ſubſtances, from 2*ſ*. to 6*ſ*. each—that give a youthful air to the countenance, and render pronunciation more agreeable and diſtinct—In a word, both natural and artificial are of ſuch real ſervice, as are worthy the attention of every one. He with pleaſure attends on thoſe who may incline to employ him, provided they cannot conveniently attend on him, at his HOUSE, where he has every accommodation neceſſary for their reception.

At the ſame place may be had,

Oil, Silk, and Ladies' UMBRELLAS, cheap. Old Umbrellas repaired, oiled, newly covered, &c. Oil Silk CAPS for bathing, German Flutes, Fifes, Violins, and Strings for ditto, Reeds for hautboys, Men, Boxes and Dice for back-gammon, Cheſs men, Billiard Balls, Ivory Combs, a variety of Canes, by wholeſale and retail, Cane Strings, Whips, electrical Machines with apparatus for experiments and medical uſe—artificial Magnets, &c. &c. &c.

N. B. Said GREENWOOD offers his ſervice to electeriſe thoſe who ſtand in need of that almoſt univerſal remedy, at 1/6 each time, at his Houſe.

☞ *Adviſe with your phyſicians.* MAY 3, 1788.

Fig. 3. A late ad of Isaac Greenwood, in the *Massachusetts Centinel*, May 3, 1788.

has fixt some Hundreds of Teeth) that he can fix them as well as any Surgeon Dentist who ever came from London, he fixes them in such a Manner that they are not only an Ornament but of real Use in Speak-

ing and Eating: He cleanses the Teeth and will wait on any Gentleman or Lady at their Lodgings, he may be spoke with at his Shop opposite Dr. Clark's at the North End, where the Gold and Silversmith's Business is carried on in all its branches." (Fig. 4.)

Even in those days there was an occasional crook among the dentists, for Dr. Dubuke, a Frenchman from Boston, who advertised in the *Constitutional Gazette,* New York, December 20, 1775, was the next month branded for stealing indigo and left the city.

Another advertiser in the *Constitutional Gazette* was Leonard Fisher. At that time he was a surgeon barber who occasionally pulled teeth, but he is worthy of mention because twenty years later we read of him as a surgeon dentist at 451 Pearl Street.

ARTIFICIAL-TEETH.

Paul Revere,

TAKES this Method of returning his moſt ſincere Thanks to the Gentlemen and Ladies who have employed him in the cure of their Teeth, he would now inform them and all others, who are ſo unfortunate as to loſe their Teeth by accident or otherways, that he ſtill continues the Buſineſs of a Dentiſt, and flatters himſelf that from the Experience he has had theſe Two Years, (in which Time he has fixt ſome Hundreds of Teeth) that he can fix them as well as any Surgeon Dentiſt who ever came from London, he fixes them in ſuch a Manner that they are not only an Ornament but of real Uſe in Speaking and Eating: He cleanſes the Teeth and will wait on any Gentleman or Lady at their Lodgings, he may be ſpoke with at his Shop oppoſite Dr. Clark's at the North-End, where the Gold and Silverſmith's Buſineſs is carried on in all its Branches.

Fig. 4. Paul Revere's notice in the *Boston Gazette,* July 30, 1770.

A peculiar advertisement appeared in Gaine's *New York Gazette,* June 9, 1777. In this Richard Dufort Dusturge claimed to be not only a dentist who made artificial teeth, but also a midwife and oculist. Either his name was spelled wrong in the first advertisement or he changed the spelling, for on March 9, 1778, Dr. Dastuge, who was probably the same man, returned thanks to his clients, announcing that he was to sail for Europe in April, but in the meantime would continue physic and surgery and making artificial teeth. (Fig. 5.) On January 1, 1780, Dr. Dastuge, who had apparently returned to New York, again offered his services as a physician and dentist.

That same year, on May 20th, we find Hamilton's tincture advertised for sale by J. Rivington. This we presume was the same tincture advertised by Mr. Hamilton, the surgeon dentist, in 1769.

DOCTOR DASTUGE,

No. 13, Duke-ſtreet,

RETURNS his ſincere thanks to the gentlemen and ladies of this city, and others who have been pleaſed to honour him with their confidence, in his practice of phyſic and ſurgery; he begs the continuance of their favours, until the month of April next, when he purpoſes to paſs to Europe: In conſequence of which, he would be much oblig'ed to thoſe indebted to him to diſcharge their accounts, which will enable him to ſettle with thoſe to whom he is indebted. He will continue practiſing phyſic and ſurgery, until the hour of his departure; likewiſe making artificial teeth, and bandages for all kinds of ruptures, and other pieces proper to repair defects of the human body, ſome of which decency will not permit him to explain, the ſecret on his part be always ſacred, as thoſe who have had occaſion, have experienced. He has had great ſucceſs in performing an operation on the teeth, which takes off the tartar, cleanſes and makes them white, in eaſy manner, no ways painful, and without doing the leaſt injury to the enamel.

Fig. 5. Dr. Dastuge's notice in *Gaine's Gazette*, New York, March 9, 1778.

It is rather surprising that in 1782, and in fact for several years later, advertisements appeared in New York offering various prices for live teeth, but without giving the name of the advertiser. Thus, an advertisement in the *Royal Gazette* of August, 1782, offers four guineas for a front tooth and directs any who is willing to dispose of one to apply at Number 28 Maiden Lane. (Fig. 6.)

What dentist did this advertising is unknown. The British were still in possession of New York, but a preliminary peace was signed on November 30, 1782, and it is possible that men who had fought with the Revolutionary forces had begun to enter the city. Thus the dentist who advertised might have been someone connected with the English forces, or possibly a Frenchman or an American. Le Mayeur did such advertising a couple of years later, and Dr. J. Browne did similar advertising in 1784. Isaac Greenwood, Jr., likewise started in New York immediately after the Revolution, but whether the ad-

T E E T H

ANY Perſon that is willing to diſpoſe of their FRONT TEETH, may hear of a purchaſer, by applying to No. 28, Maiden Lane, for which a genteous price will be given.

N. B. Four Guineas will be given for every Tooth.

Fig. 6. An ad for front teeth. From the *Royal Gazette*, August 1, 1782.

vertiser noted was one of these or someone entirely different is not known to the writer.

At all events, this advertisement implies a demand for teeth to be used in transplanting, which in itself suggests a regular dentist of the period.

342 West 85th Street.

Paul Revere's Horse

By Dr. F. C. Moore, Tulsa, Okla.

On that unchartered nag don't be severe,
He "strutted his stuff" when he carried Revere
To undying fame and a hero's place,
By winning that famous historical race.

What matters it now about the shade
Of his outside coat—as colors *all* fade,
Or whether his carcass was small in girth;
Wasn't he there at this nation's birth?

He might have been ring-boned and spavined, too,
With dirty white coat or a clay-brown blue,
Or a sway-backed mare, pot-bellied with foal—
What do we care, for "it" *made the goal.*

It might have been measly, skinny and frail,
With a bur-matted mane and a calf-chewed tail,
But we all owe it homage, so let's give a cheer
For the horse that made famous one Paul Revere!

512 Bliss Building.

Some Fundamental Features Involved in the Evolution of the Human Skull and Dentition

By Joseph H. Kauffmann, D.D.S., New York, N. Y.
Dental Department, Bronx Hospital and Dispensary

I.

The purpose of this study is to offer a few of the generally accepted fundamentals of evolution, variation and heredity, and to present some special features of the human locomotor apparatus, skull and dentition and their relationship to evolutional development from lowest to highest form. Before proceeding, the writer wishes to state emphatically that there is no delusion of originality on his part as considerable portions of the contents are in reality a resumé of the work of noted biologists.

Life represents the reaction of organisms to their environment. Natural scientists have good reason to remember the year 1859. It was then that Charles Darwin brought out the result of his epochal research on the *Origin of Species.* From the work laid out in that treatise the term "Darwinism" has originated and those not closely cognizant of the basic tenets involved couple this term with the theory of descent or organic evolution. However, Darwinism and evolution are two entirely different matters and are not synonymous.

The theory of descent associated with evolution is that various living as well as extinct species of organisms are descended from one another and from common ancestry. It is not originally with Darwin, but was postulated by Goethe (1789), Erasmus Darwin (1794), Lamarck (1809), Chambers (1884) and Wallace (1858). As a matter of fact, the Greeks gave it their consideration. The proofs are explicit and they have become firmly established through studies in taxonomy, comparative anatomy, paleontology, physiology, embryology and geographical distribution.

The observations of Darwin, according to Kellogg, are:

1. There is an increase by multiplication in geometrical ratio of individuals in every species whether or not reproduction is by simple division, sporulation, budding, parthenogenesis, conjugation and division, or finally amphimixis, which is a term indicating bisexual fertilization as found in man.

2. There is always some variation in form and function, though different in degree, among all individuals even of the same generation or brood.

3. Parental characteristics of form and function are transmitted to the offspring.

Some facts partly observed and inferred are:

1. The lack of room and food for all individuals and competition by each form for existence.
2. Those individuals with slight differences (or variations) giving them advantage over their neighbors are most successful in competition for existence.
3. Favored individuals hand down to their offspring their own advantages.

Competition and struggle among individuals and kinds may be:

1. Active struggle of individuals with others of their own kind.
2. Active struggle of individuals of one species with those of other species.
3. Active struggle with physico-chemical external conditions, or miscellaneous environmental circumstances.

Assistance may be rendered by:

1. Intra-specific altruistic life, as seen, for example, among bees in a hive.
2. Interspecific, as when two species live together in symbiosis: for example, the hermit crab and the sea-anemone.
3. The struggle against untoward natural conditions as under forced or special circumstances of living.

The result of the foregoing is an inevitable "Darwinian" natural selection of individuals and species resulting in what Huxley termed the "survival of the fittest." Most die before reaching maturity and only those possessing fortunate congenital differences (or variations) continue to live.

Variations are of three kinds:

1. Non-heritable modifications.
2. Heritable combinations.
3. Heritable mutations.

Under ordinary conditions, according to the law of individual variations of Quételet, such variations occur according to the law of probabilities or mathematical chance.

In the higher forms in which we are particularly interested, including man, reproduction is accomplished through bisexual fertilization. Briefly speaking, male and female possess their own peculiar type of reproductive cell or gamete and the union of male and female gametes results, in what is termed in embryology, the zygote. In the zygote occurs a complicated system of changes involving chiefly the combined male and female chromosomes, which represent a cellular

development of the chromatic network of the parental germ cells. It is in the chromosomes of the latter that are found the so-called "genes," which hold unproven but theoretically accepted factors supposed by biologists to carry individual characteristics from one generation to another. Originally, therefore, the genes are structures which have been lodged within the chromosomes of the parent male and female gamete and have been carried down through various cellular changes leading to reproduction and the formation of offspring.

Every organism is composed of bodily cellular structures or somatoplasm which preponderates over the germinal substance or germ plasm. The latter is the physical basis of inheritance and is associated with reproduction.

We, therefore, come to the point that heritable characteristics are transmitted from parent to offspring through the influence of the germ plasm and not by means of somatoplasm. We do not know the cause of variations within the germ plasm since we are not aware of the true structure of genes. However, chromosomes which contain the genes can be demonstrated under the microscope.

Most biologists assume that only those changes which affect the germ plasm can be inherited by the offspring of the parents, and since nearly all students consider that changes brought about during embryonic development or thereafter affect only the somatoplasm, their consequent opinion is that no environmental modifications or so-called "acquired" characteristics can be inherited. During recent years Paul Kammerer of Vienna has striven to disprove this fast-set idea, but has apparently failed in his efforts to change the viewpoint of most authoritative biologists.

Various views upon this subject may be briefly considered:

1. Environmental influences may affect the soma only and there would, therefore, be no change in the offspring.
2. Changes in the soma may be strong enough to influence the germ plasm at the same time and consequently become hereditary.
3. The soma may be affected and later, but not immediately, pass this change on to the germ plasm, which character would then be transmitted to the offspring.
4. Only the germ plasm may be affected by environmental conditions and not the soma, thus insuring the inheritance of the acquired characteristics.

The first view is the one most generally accepted.

When the genes of gametes are identical, as in pure lines, there is no variation except through the uncommon appearance of mutations.

By a pure line or type we mean animals which breed in a direct line, giving offspring like themselves with homogeneous characters.

Most variations within pure lines are the result of environmental influences recurrent in each generation but with homogeneous germ plasm. Variability within a population or random group of people is the composite variability of its component pure lines, but the germ plasm is not the same in all individuals.

Mutations as noted by Hugo de Vries are those characters which, having no place in ancestry, appear in the parent and are transmitted to the offspring. These changes may be slight or marked and abrupt, but either way must affect the germ plasm in order to be heritable.

We previously spoke of acquired or somatic changes which are non-heritable. Then we stated that mutations were heritable.

There is another form of hereditary difference termed "combinations," which are in reality new characters derived by recombinations of factors in the germ plasm of old characters. These, according to Woodruff, may be of different kinds.

We have alternative inheritance in which a character, let us say the shape of the arch or arrangement of the teeth in the child, may be exactly like that of one parent and unlike that of the other. Then there is Mosaic inheritance, in which each parent hands down a particular character without the exclusion of that of the other and without blending. Next is blending inheritance, as is exhibited when black and white parents produce mulattoes. Again, individual characteristics may be transmitted by the male only to the female offspring, which is known as sex-linked. Another form of inheritance is atavism, in which parental characters are invisible in the children but appear in the grandchildren. And, lastly, we have reversion, which is the appearance of distant ancestral characters. These foregoing types of inherited characters form the second group of heritable variations. All heritable variations not the result of recombinations are mutations.

The effect of artificial selection is isolation and not creation and hence there can be no heritable variations among pure types.

The study of variational statistics by biologists is called biometry, and Karl Pearson and Raymond Pearl are two of the well-known names associated with the development of biometrics.

Mendelism is the name applied to the principles laid down by the great Austrian biologist, Gregory Mendel, in his observations upon progeny derived in a long series of experimental breeding. In his famous crossing of tall and short peas, in which these two characters were present in the parents, all of the offspring of the first filial generation, F_1, were tall like the one parent and unlike the other and they did not show any evidence of a hybrid character. He termed tallness a dominant, D, and shortness a recessive, d, character. When the tall offspring of F_1 were inbred or mated among themselves, their offspring of the second filial generation, F_2, proved to be tall and short

in the proportion of 3:1 or 3D:1d. Thus this ratio became associated with the name of Mendel. While the Mendelian ratio may not be found to be mathematically exact, it is almost so, especially when the number of offspring is large.

When the Austrian monk experimented with the short plants or dwarfs (recessives) of the F_2 generation and fertilized them among themselves, they gave forth only their own kind continually and were called "pure" or extracted recessives.

Again, the tall plants, D, of F_2 generation when inbred gave progeny of two kinds, one-third D, which bred true indefinitely and were pure or extracted dominants, and two-thirds hybrids, the same as their parents, giving, when inbred, the same ratio of 3D:1d in the third filial, F_3, generation.

Mendel pointed out that characters or groups of characters are usually inherited as definite units. Of course there is a vast store of knowledge, related principles and experimentation connected with Mendelism, but the detailed mechanism and the additions and modifications of modern biologists cannot be discussed here.

Concerning heredity, Francis Galton, a cousin of Charles Darwin, formulated two important principles:

1. *The Law of Ancestral Inheritance.* The offspring of two parents receives on the average one-quarter of each inherited character from each parent or one-half from both. The four grandparents contribute one-quarter, or one-sixteenth each, the eight great-grandparents one-eighth, or one sixty-fourth each, and so on ancestrally.

2. *The Law of Filial Regression.* On the average any deviation or change of the parents from the racial type is received by the offspring in diminished degree, and the deviation in the progeny from the racial mean is two-thirds that of the progenitors.

Heredity plays a strong part in the make-up of man, and there is much truth in the popular axiom that "blood will tell."

(To be continued)

The Relation of Nutrition to Preventive Dentistry*

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(Continued from September)

In order to avoid repetition, I will not discuss at length the constituents of the diets, but will let it suffice to call attention to them in explaining the charts. All I will say is that the diet must contain a sufficiency of fats, carbohydrates, vitamins and minerals and must not be too acid. There are other points to be considered in arranging a dietary, but the worst faults are those consisting of deficiencies in the essential elements. Excessive proteins, excessive fats, excessive sweets are also injurious, but inasmuch as I am obliged to limit my remarks I will not go at length into these subjects.

The charts here presented were drawn for the purpose of showing the more important sources of protein, lime and iron and of giving a sample menu containing them in sufficient amounts. Of course the subject of selecting a dietary is a complex one. However, I thought it best to pick out this important factor for emphasis.

Minerals

Notwithstanding the importance of the minerals as tissue-builders, particularly of the bones and teeth, there is little of a definite nature in medical literature on this subject. The work of Sherman on calcium presented in the *Journal of Biological Chemistry* indicates that the diet of the American people is more likely to be lacking in lime than in protein. The body of a man weighing 154 pounds contains approximately four and a half pounds of calcium oxide (lime). The daily requirement of lime is fifteen grains. I have shown in the accompanying chart ten important sources of lime. Milk and cheese surpass all others. However, a number of the greens run them a close second. Molasses and unrefined sugars are among the leaders, but from white sugars the minerals are extracted. Bread and other grain products are lacking in such a degree that it is suggestive. Meat is even more lacking. Those who neglect the use of greens (and I think we do in this country) and of milk and cheese, but whose diets consist largely of the grain products and meats, can hardly expect to develop good teeth, which are so largely composed of lime.

Phosphorus is associated so intimately with protein that it is not apt to be lacking in our dietary.

*Read before the New York Stomatological Society at its annual meeting in cooperation with the Allied Dental Council, New York, N. Y., June, 1924.

Iron is present in the greens along with calcium. It is also present in large proportion in meats, eggs and whole grain products. The dietary of the average American, therefore, is less apt to produce anemia than diseases dependent upon the lack of calcium. However, when the selection of food is largely white bread, white cereal, cake and sweets, anemia from faulty diet is quite apt to follow.

IMPORTANT SOURCES OF LIME

DAILY REQUIREMENTS 15 GRAINS CaO

	Grains	Requirement
Milk, 10 oz	= 7.3	= 1/2
Cheese, 1 oz	= 5.7	= 1/2.5
Mustard greens, 2 oz	= 6.0	= 1/2.5
Turnip tops, 2 oz	= 4.2	= 1/4
Molasses, 2 oz	= 2.5	= 1/6
Bread, Boston brown, 3 oz	= 2.37	= 1/7
Oranges, 7 oz	= 1.9	= 1/8
String beans, 4 oz	= 1.2	= 1/13
Spinach, 2 oz	= 0.8	= 1/19
Bread, whole wheat, 6 oz	= 0.79	= 1/19

IMPORTANT SOURCES OF IRON

DAILY REQUIREMENTS 0.2 GRAINS

	Grains	Requirement
Romaine, 2 oz	= 0.1	= 1/2
Eggs, 2	= 0.048	= 1/4
Bread, graham, 6 oz	= 0.06	= 1/3
Bread, whole wheat, 6 oz	= 0.042	= 1/5
Beef, 6 oz	= 0.055	= 1/4
Mustard greens, 3 oz	= 0.063	= 1/3
Spinach, 3 oz	= 0.045	= 1/5
Chard, 3 oz	= 0.03	= 1/6
Dandelion greens, 3 oz	= 0.03	= 1/6
Prunes, 2 oz	= 0.026	= 1/8
Raisins, 1 oz	= 0.009	= 1/20

PROTEINS

Proteins enter so largely into the tissues of the body that it is accepted by the authorities that they have their relation to good teeth. It is not held, however, that we require protein in such large amounts as was formerly thought necessary. Seventy grams is considered a golden mean between the old and the new theories on this subject. This is twice the amount contained in one-third of a pound of meat. I showed in an article which appeared in the *New York Medical Journal,* in the fall of 1915, that the average varied diet contains between thirty and forty grams of protein, picked up here and there from articles properly placed in the class of carbohydrates and fats. An illustration which explains what I mean is drawn from bread, which is fifty per cent carbohydrate and furnishes two and three-tenths grams of protein to the average slice. I would consider, therefore, that a dietary which con-

tains one-third of a pound of meat and no other food of the protein class would be sufficient for a day. If meat is substituted in part or in toto, the chart which I present shows how we may select a sufficiency. One quart of milk is practically equivalent to one-third of a pound of meat. Five ounces of cheese is slightly more than equivalent, and so forth down the list.

IMPORTANT SOURCES OF PROTEIN

DAILY PROTEIN REQUIREMENT IS 70 GRAMS = 2½ OZ. = 287 CALORIES = ½ GRAM OR 2 CALORIES A POUND OF BODY WEIGHT

	Grams
Meat, 5 oz.	= 34.5
Milk, 1 quart	= 33.0
Cheese, cream, 1 oz.	= 8.0
Cheese, American, 1 oz.	= 8.0
Bread, whole wheat, 6 oz.	= 17.4
Eggs, 2	= 13.0
Baked beans, 2.6 oz.	= 5.4
Peas, 2 tablespoonfuls	= 5.0
Cereal, moist, 1 helping	= 3.0
Banana, 3⅓ oz.	= 1.5
Orange, 4 oz.	= 1.0

FATS

The fats comprise butter, olive oil, egg yolk, bacon and fat cuts of meat. They furnish not only a large number of calories but fat soluble vitamins as well. The latter are very important in relation to the teeth and in relation to one's resistance to infectious diseases. It seems that fat soluble vitamin is concerned in the regulation of deposition of calcium in bones and teeth, and, if this vitamin is absent from the diet, the calcium, though present in sufficient amount, will not be utilized but will be largely excreted through the intestinal tract.

VITAMINS

Bound up with the experimental work in recent years on the subject of diet is the relation of vitamins, newly discovered essential principles in our food. They act to promote the health, and their absence produces many symptoms. Among these symptoms caries and diseases of the teeth attachments are prominent. Vitamin C must be present or scurvy develops, and with scurvy the gums are affected. The fat soluble vitamins are closely related to the condition of caries. Articles which contain all the vitamins known are: tomatoes, fresh cabbage, carrots, cauliflower, lettuce, spinach and whole milk, though the Vitamin C in milk is rather easily destroyed by boiling or pasteurization.

FOOD AND HEALTH

The accompanying menu was first shown before the New York

Stomatological Society. It was also published in an article, *Food and Health,* in the *Medical Journal and Record,* May 21, 1924. It was drawn to show how to obtain the minerals, proteins and vitamins. It furnishes an average number of calories sufficient for the city-dwellers, as well as an average amount of protein with a great sufficiency of vitamins and minerals. It is quite probable that if any food elements have not been discovered, this dietary will contain them because of the plentiful selection of vegetables and fruits and the inclusion of milk and cheese. So far we have found that fruit and vegetables contain the various elements needed, and when we use a variety of them we are pretty sure to have a sufficiency of all these elements. Milk has been considered a fairly well-balanced article of food, as milk is formed by

A BALANCED MENU

BREAKFAST

	Calcium (CaO) grains	*Phosphorus (P_2O_5) grains*	*Iron grains*	*Protein grams*	*Fats grams*	*Carbohydrates*	*Calories*	*Vitamines*
Orange	2.0	6.0	0.006	1.		15.	75	BC
Oatmeal	0.4	0.5	0.016	4.3	3.00	30.	100	AB
Milk, 2 oz.....	1.5	1.9	0.002	1.87	2.87	3.	40	ABC
Cream, 40%, 1 oz..	0.5		0.001	1.	12.00	1.	120	A
Bread, 1 slice whole wheat	0.13	1.2	0.006	2.3	0.50	13.	70	AB
Butter, 1 ball, ⅛ oz.	0.03		0.0003		8.50		80	A
Café au lait:								
Coffee, 4 oz.,								
Milk, 4 oz.....	3.0	4.0	0.004	3.75	4.75	6.	80	ABC
Total	7.56	13.6	0.0353	14.22	31.62	68.	565	

LUNCHEON

	Calcium (CaO) grains	*Phosphorus (P_2O_5) grains*	*Iron grains*	*Protein grams*	*Fats grams*	*Carbohydrates*	*Calories*	*Vitamines*
Eggs, 2	1.60	5.0	0.0490	13.00	5.000		150	AB
Bread, 2 slices whole wheat ..	.26	2.4	0.0120	4.60	1.000	26.0	140	AB
Butter, 2 balls....	.06		0.0006		17.000		160	A
Potato, baked	.35	2.5	0.0220	2.20	.125	22.2	100	ABC
Salad:								
Lettuce, 2 oz....	.52		0.0060	0.57	.125	1.4	10	ABC
Pineapple, 1 slice	.20		0.0040	0.20	.300	19.3	80	BC
Cream cheese, 1 oz.	5.70	1.8	0.0057	8.00	10.000	1.0	130	AB
Mayonnaise, 1 tablespoonful ...				.35	11.000	.5	100	
Café au lait:								
Coffee, 4 oz.,								
Milk, 4 oz.....	3.00	4.0	0.0040	3.75	4.750	6.0	80	ABC
Total	11.69	15.7	0.1033	32.67	49.300	76.4	950	

DINNER

	Calcium (CaO) grains	Phosphorus (P_2O_5) grains	Iron grains	Protein grams	Fats grams	Carbohydrates grams	Calories	Vitamines
Beef, roast, 2 slices 5x3x¼ inches	0.180	4.500	.0860	23.00	22.00		300	B
Beans, string, 1 cup	1.100	0.283	.0160	2.40	0.30	5.8	40	ABC
Carrots, 2 tablespoonfuls	1.000	0.500	.0070	1.00	0.40	9.3	40	ABC
Salad:								
Romaine, 2 oz...	0.550		.1000				10	ABC
Pineapple, 1 slice, canned	0.200	0.675	.0035	0.21		19.65	80	BC
Banana, ½	0.093	0.700	.0044	0.75	0.25	11.0	50	ABC
Apple, ½	0.120	0.375	.0039	0.25	0.25	8.5	35	ABC
Grapes, white, 12	0.080	5.400	.0009				60	BC
Mayonnaise, 1 tablespoonful ...				0.35	11.00	0.5	100	
Pineapple juice, 2 tablespoonfuls								
Apple, baked, 6 oz., and sugar, 1 teaspoonful....	0.260	0.650	.0080	0.50	0.50	17.0	100	ABC
Total	3.583	13.083	.2297	28.46	34.70	71.75	815	

the cow and goat from a vegetable diet. In the January, 1924, issue of the *Review of Clinical Stomatology* I instanced a case in which no caries occurred in the teeth in nearly twenty years notwithstanding a pregnancy. The dietary was similar to the one here presented.

Before closing, I wish to call attention to the fact that this sort of menu holds greater possibilities for variety than the average person in this country is accustomed to. The chef in the average household is in a rut as far as the menus he provides are concerned. There are only a few kinds of meat to be eaten. Vegetables, greens and fruits, on the other hand, are present in this country in much greater number and, by various combinations both by themselves and in salads, offer the opportunity of great variation in one's diet.

40 East 41st Street.

Dr. Morinosuke Chiwaki Honored by an American University

Dr. Morinosuke Chiwaki, the President of the Tokyo Dental College and the Dental Federation of Japan, was recently recipient of the degree of Doctor of Laws conferred upon him by Loyola University of Chicago. Only a very few Japanese have ever been thus honored by any American university, among these being the late Prince Ito, the founder of the Japanese constitution and one of the greatest statesmen Japan has ever had; the late Prince Matsukata, who was an able Minister of Finance, and the late Hon. Kazuo Hatoyama, a distinguished

Fig. 1

(From left to right)—Hon. Edgar A. Bancroft the American Ambassador to Japan. Dr. Morinosuke Chiwaki. Viscount S. Goto, Ex-Minister of Foreign Affairs. Hon. Y. Kamata, Member of the House of Peers and Ex-Minister of Education.

lawyer. Among those living one may name Viscount Kentaro Kaneko, a member of the Privy Council, and Tsuneo Matsudaira, the present Japanese Ambassador at Washington.

The conferring of an honorary degree upon Dr. Chiwaki by an American university means the strengthening of the close relationship and mutual good will between the two countries. It also attests to the international character of the reputation which Dr. Chiwaki now enjoys

in dental circles. It was most fitting for an American university to recognize and honor such a personage as Dr. Chiwaki, who has for thirty years stood for American dentistry and the American ideas of dental education. During the past forty years Japan has been learning much about dentistry from America and has advanced greatly during that time, so much so that all dental colleges are following the American method of dental education.

The ceremony of conferring the degree took place in the auditorium of the Imperial Hotel, Tokyo, on the afternoon of June twenty-fifth. The room was filled to more than its capacity, there being over thirteen hundred present to witness this rare ceremony. Dr. Y. Kanasugi, a member of the House of Peers and President of the Tokyo Medical Society, made a speech presenting Dr. Chiwaki as candidate for the degree, in the course of which he said, "I have the great pleasure of presenting Morinosuke Chiwaki for the degree of Doctor of Laws, in recognition of his services for over thirty years in developing dental science in Japan; as a leader in dental education, sending forth almost one-half of the dentists now practicing in the Empire of Japan; and in being instrumental in inaugurating the first dental laws as well as in revising them in 1916 and 1925. Dr. Chiwaki has written many books and articles on operative dentistry. He has supervised the publication of seventy books in one hundred and eighty volumes, treating on various subjects in dentistry. With the establishment of the Japanese Dental Association in 1903, Dr. Chiwaki accepted the position of chairmanship and ever since has been doing his utmost for the development of this association. In 1907, Dr. Chiwaki organized the Dental Federation of Japan, which has contributed greatly to the progress of dental education as well as improvement of oral hygienic conditions among the Japanese people. In 1918, Dr. Chiwaki was elected vice-president of the Federation, and one year later became president, which position he still holds."

The American Ambassador, the Hon. Edgar Addison Bancroft, in presenting the degree, eulogized Dr. Chiwaki by saying, "It is a great pleasure as well as honor to confer a degree upon you, but greater than any honor which a university may bestow upon you is the presence here this afternoon of this large number of distinguished people and students, which shows the esteem in which you are held by countrymen. Your fame was early known abroad, as a leader of your profession in Japan, and with your lofty character you have been successfully engaged in dental educational work. With your great zeal you have been the first in inaugurating dental laws as instrumental in revising the same as time advanced. Your work has been praiseworthy and it has pleased a great university of my country to recognize and appreciate your services. Therefore, by virtue of the power of the Trustees of

Loyola University, vested in the President and by him relegated to me, I hereby have the great honor as well as privilege to confer upon you the degree of Doctor of Laws, with all its rights, honors and privileges."

Dr. Chiwaki accepted the degree with words of gratitude and thanks to Loyola University, the American dental profession and the Japanese dental profession. He said that he had to disclaim full honor for himself alone, but was compelled to ascribe the honor to the profession of his countrymen.

Congratulatory speeches were made by Hon. Y. Kamata, Ex-Minister of the Department of Education and a member of the House

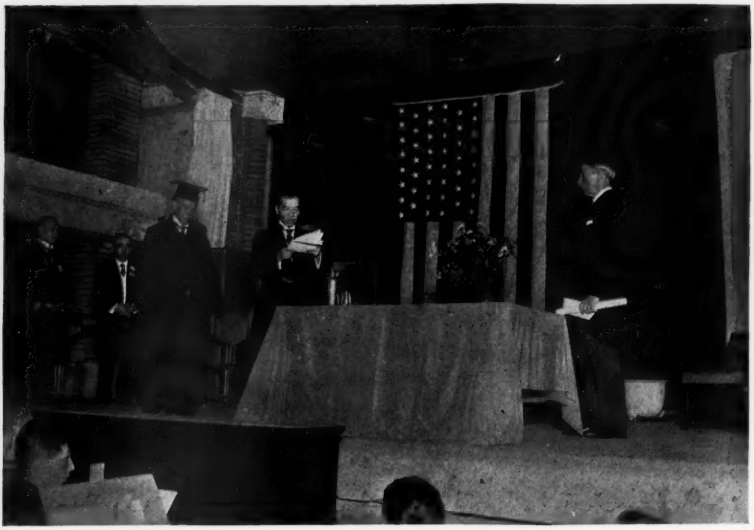

Fig. 2

(From left to right—front row)—Dr. Morinosuke Chiwaki. Dr. Y. Kanasugi, Member of the House of Peers, and President of the Medical Society of Tokyo. Hon. Edgar A. Bancroft, the American Ambassador to Japan.

of Peers, who spoke feelingly on the honor conferred upon Dr. Chiwaki. In the absence of Dr. T. Araki, the Chancellor of the Kyoto Imperial University, who was to have been the speaker for the occasion, Dr. T. Muto, the President of Fukuoka Prefecture Dental Society, read Dr. Araki's speech.

Telegrams of congratulation from Drs. C. N. Johnson and Truman W. Brophy of Chicago, Dr. H. Noguchi of the Rockefeller Institute

of New York, and Dr. G. Layton Grier of Milford, Delaware, were read, as well as several of the messages received from all parts of the empire, which numbered over two hundred and forty. These were wildly cheered. The meeting closed with three resounding cheers of "Banzai" to Loyola University, Ambassador Bancroft and Dr. Chiwaki, which were proposed by Viscount S. Goto, who took active part in the ceremony, together with Dr. S. Tomiyasu, in placing the hood upon Dr. Chiwaki.

Following the ceremony, a grand dinner was held in the large banquet hall of the Imperial Hotel, celebrating this happy occasion, being attended by over six hundred and thirty guests. The Ambassador responded to a call for an after-dinner speech, giving an eloquent address, with which he won the hearts of all his admiring listeners.

Other speakers were Hon. T. Tokonami, the Ex-Minister of the Department of Home Affairs; Viscount S. Goto, the Ex-Minister of Foreign Affairs; the Hon. H. Arimatsu, a member of the Privy Council; and Mr. U. Yoneyama, President of the Mitsui Trust Bank. Dr. Chiwaki also responded.

Owing to distance, many of the well-wishers could not be present at the ceremony. Thus it is reported that in many places throughout the country special meetings were held to celebrate this occasion.

The events of this memorable day, without doubt, will go down in Japanese dental annals as the greatest up to the present time, a mark which probably will not be eclipsed for some years to come. (Editorial in *The Nippon No Shikai,* Tokyo, July, 1925.)

A College Education and Its Relation to Dentistry

By Philip Nemoff, D.D.S., West New York, N. J.

Before launching into the subject let us first agree on what is meant by a college education. Some of our professional brethren have always been under the impression that passing through a dental, law or medical department of a university comprises a college education. In a certain sense they are correct, in so far as any of these courses are taught in colleges and the graduates are granted college degrees, but the instruction in all of these branches is technical.

Strictly speaking, a college education includes a four years' course in science or art leading to the degree of Bachelor of Science (B.S.) or Bachelor of Arts (B.A.). Some medical colleges and one dental college include either a B.S. or a B.A. degree for entrance requirements. There are universities where two degrees, such as B.S. and D.D.S., can be earned in six years, which would ordinarily take eight years.

A great many people, so-called successful business men included, discuss the pros and cons of the advantages of having a college education without having the slightest idea of what the course includes. Therefore it is interesting to review an outline of what is taught at colleges such as Columbia, Harvard and New York University. The following is typical of the courses required for a Bachelor of Arts or a Bachelor of Science degree.

Outline of Courses

I. Four Year College Course

Freshman Year

Section A (For B.A. Degree)

First Term	*Credits*	*Second Term*	*Credits*
Latin or Greek	3	Latin or Greek	3
Public Speaking	1	Public Speaking	1
English	3	English	3
Mathematics	3	Mathematics	3
Other Language	3	Other Language	3
Elective	3	Elective	3
*Military Science	1	*Military Science	1
	17		17

* Students physically disqualified for drill may be assigned to Physical Training.

SECTION B (FOR B.S. DEGREE)

First Term	*Credits*	*Second Term*	*Credits*
English	3	English	3
Public Speaking	1	Public Speaking	1
Modern Language	3	Modern Language	3
Mathematics	3	Mathematics	3
Physics or Chemistry	3	Physics or Chemistry	3
Elective	3	Elective	3
*Military Science	1	*Military Science	1
	17		17

LIST OF FRESHMAN ELECTIVES, SECTIONS A AND B

Greek	Mathematics
Latin	Chemistry
French	Physics

First Term	*Credits*	*Second Term*	*Credits*
German	.....	.....	.....
Spanish	.....	Biology	.....
History	.....	Geology	.....

SOPHOMORE YEAR
SECTIONS A AND B

At least 15 credits each term from the list of sophomore subjects given below:

Greek	Philosophy
Latin	History
English	Political Science
Public Speaking	Economics
French	Mathematics
German	Chemistry
Spanish	Physics
Italian	Biology
Music	Geology

JUNIOR AND SENIOR YEARS

The requirements of the junior and senior years are the completion of one major and two minors, a graduation thesis and the election from subjects not already taken and credited of a sufficient number of credits to bring the number of credits each term to a total of 15.

The first subject on the list is Latin, from which a great many words of the English language are derived. A knowledge of Latin renders it easier to study most medical and dental subjects, particularly anatomy and materia medica, which includes prescription writing.

The importance and advantage of having a college course in chemistry prior to becoming a dental student is so obvious that it needs no comment.

Biology, which may be defined as the study of the origin, structure, development, function and distribution of animals and plants, is a great aid to the study of human physiology. While a knowledge of the latter is more important to the physician than to the dentist, still a certain dental college in New York "flunks" more students in this subject than in any other one in the curriculum.

The list of elective subjects includes modern languages, such as French, German, etc. The average dentist will concede that a smattering knowledge of foreign languages is not to be despised in a dental office, particularly where one is practising in a large city of a typical cosmopolitan population.

So much for the practical side of a college education in relation to dentistry. There is another angle to this subject. Why is it that college class reunions, banquets, etc., induce graduates of sixty and seventy years of age to travel long distances and oftentimes sacrifice important business matters to attend? Because the memory of their college days is something sweet and wonderful, never to be forgotten. At these meetings, which are often preceded by athletic events, the old alumnus becomes just as enthusiastic as the young freshman if the football team of his alma mater happens to be the victor.

It is unfortunate that certain narrow-minded people measure the value of a college education in terms of dollars and cents. Because one is an authority along one line, that does not make him one in all other subjects. A man may be great in an industry, but that does not mean that he is an authority on matters pertaining to international affairs and general education.

The actual instruction received in a college course is not the entire thing, but the associations, which are both pleasant and of life-long value, and the great men with whom one comes in contact make for physical, intellectual and moral development.

One often hears about "so-and-so," a self-made man, having made a success in life without the aid of a college education. This statement is so old that, to use a favorite expression, "it has whiskers on it." The self-made man has made a success not because of not having a college education *but in spite of it.* He simply missed something which would probably have made his success even greater.

655 Bergenline Avenue.

Why a Dental Assistants' Association?*

By Edward L. Mitchell, D.D.S., Indianapolis, Ind.

I have assumed in writing this paper that it is to be read before a group of girls from the entire State—girls from the city, the small town, the country; also that some of these girls have only recently become dental assistants while others are old-timers and could no doubt write volumes upon *Why a Dental Assistants' Association?*

When once a group calls itself an association, it immediately assumes certain obligations, not only to its individual members but to outsiders with whom it comes in contact. In your case it means the dentists and the public whom the dentist and you serve.

Let us consider the word "association" and its synonyms to see how far-reaching it is. Each one suggests an ideal for you—fraternity, syndicate, union, intimacy, combination, participation, cooperation, affiliation, connection (meaning relationship, bond, tie, link). An association always connects persons for some particular purpose. You have named yours—that of assisting dentists—and if each member could realize the full meaning of the title you have taken, little would be left to discuss.

Mary Lyon, a pioneer in education for women and founder of Mount Holyoke College, said, "Education is to fit one to do good." This was many years ago at a time when it was generally considered indecent for girls to do anything outside their own homes. Today we all agree that every girl whether rich or poor should be trained in some occupation. The rich girl may not always be rich, and the poor girl always poor, but whatever her lot a girl ought to know how to do some one thing and do it well. John Ruskin, who gave so many talks to young people some fifty years ago, said, "Whatever else you may be, you must not be useless and you must not be cruel."

If your association can hold a girl interested during that stage when she otherwise would be drifting from one job to another, gaining little and giving little, then you have done much toward establishing her. It is true, girls often apply themselves most earnestly but find they have slipped into the wrong notch and a hasty exit is best for all concerned. But too often, because of lack of interest being aroused, a girl fails to see the rich possibilities in store for her, and there are so many in your field. The old-time office girl who sat and embroidered, answered the 'phone and announced the arrival of patients is now replaced by an assistant, a girl who can do much of the mechanical and technical work, who can act as a dentist's ledger for all sorts of details he has

*Read before the Indiana State Association of Dental Assistants, May, 1925.

no time to store away in his mind. She has become the pivot around which the office spins, and lack of friction, steady speed, ease and quiet rest with her.

"Experience" is the cry of the professional man today, to whom every minute may mean dollars and to whom speed and accuracy count for everything. But one has to start sometime, and if the girl just beginning as a dental assistant is willing to begin at the bottom and say so, she perhaps has learned the greatest lesson of life. It is much better to start on the lowest rung of the ladder and climb up than to start at the top and fall down. As a member of your Association, a girl can learn many lessons without painful mistakes having to be the teacher. From you she may expect encouragement where doubt lies in her mind. When she has confidence in you, so has the dentist. He is grateful that the task of teaching a new assistant general office etiquette and many finer details no longer rests upon his shoulders. The day may come when the first requirement shall be a membership with you, and the dentist's mind will be free.

When one considers the opportunities open to the city girl and those of her country cousin, the advantages seem to be all in favor of the former. How many girls in the city realize this? How many of them appreciate the fact that opportunity is constantly knocking at the door? Comparatively few, I fear.

But strange as it may seem, it is more often the small-town girl who is most successful in the city. Three reasons may be given in explanation. First, the out-of-town girl has to depend entirely on her own efforts to live; if she does not keep her position and advance, she cannot eat or have a roof over her head, so she strains every nerve toward success. The city-bred girl usually lives at home and is sure of at least a roof over her head and food to eat if she is out of a job, so she does not worry about it. Secondly, the out-of-town girl who has gone away to the city so proudly hates to return home and admit defeat. It is a point of pride to succeed. Thirdly, the city girl, at the time she starts to go to work, is just at the age when pleasure appeals to her most, and theatres, dances and dinners may mean more to her than her job. This of course is only human and natural, yet it does distract her from her daily work. The out-of-town girl does not know so many city people, does not go out so much, therefore she has more time to study and work toward advancement.

This may sound unfair and untrue to the city girl, who believes in her heart that she is as ambitious as anyone else, and it may also sound like an argument for the small-town girl to try her luck in the city. It is not. I am talking generally, and perhaps there are many small-town girls who never reach their goal. But I am trying to encourage the city girl to make her job more than a mere bridge between school

and matrimony—to make it one of the big things in her life and to work harder for success.

The city girl has every educational advantage at her disposal and the greatest opportunities. In refutation you may say that there are as many girls looking for positions as there are positions. But remember that every girl has the chance to make herself not an ordinary assistant but an extraordinary one, so that her services will be sought and she will not have to seek.

It is the close proximity of the small towns of 5000 inhabitants and under to cities that makes girls yearn for adventure and new interests. It is most natural. But work in a small town is likely done under much less trying conditions, and one can keep her health and youth many years longer. And remember, first, last and always, that no matter what success you may attain, if you lose health and happiness in the pursuit of that success, you have gained absolutely nothing.

We all owe a certain duty to the community in which we were born and raised, a duty to give to it the best in us in return for what it has done for us. There are many opportunities for the girl in the small town. Her salary may not be so large, because her expenses are much less, but think what a chance to be a promoter of more ideal conditions and improve old ones.

But what has all this to do with *Why a Dental Assistants' Association?* To the girl in the city your organization should bring a deeper understanding of what her task really is, it should help her utilize the opportunities she has had; it should help her to see that sincere participation in her work and in your organization, as well as cooperation with other assistants around her, may give her keen enjoyment and satisfaction.

Think what such an organization means to a girl who tries her wings in some city other than her own. To begin with, she will not have to face the greatest terror in the world—loneliness—because she can immediately establish friendship on a common ground. If any of you saw Otto Kruger in *The Nervous Wreck,* you remember what a despairing soul he was—despondent, irritable, sick, and with not a friend around him. One day he chanced to meet a man who took the same kind of pills he did and a deep friendship sprang up there and then. To be sure, they did not exactly agree, for the nervous wreck took his pills before meals in warm water and his new friend took his after meals in cold water, but they were the same pills and enough in common to open up further avenues of interest. So whether it be pills or teeth, either may serve as a gateway to friendship and intimacy.

Or if one of your members is in a small town, how much your group means to her! She is a part of a whole, and in whatever new is promoted she has the same opportunity to act as agent. There is a bond linking her with her State Sisters, and along with all of them she re-

solves to leave in her work some contribution entirely her own in the way of making work easier or conditions under which it is done happier and better for the worker who comes after her.

To me one of the greatest values of your organization rests on the ethical side. The higher you place your principles of morality and duty in your capacity as dental assistants, the greater will be your service to your members and to the men whom you assist.

Much is said and is being continually written about the snares into which the unsuspecting girl thrusts herself in answering advertisements in the daily newspapers. Of course, it is always wise to be cautious, but the girl who goes into an office with her head full of stories of men who try to lure girls to destruction, etc., will be looking for trouble, will unconsciously communicate that thought to others and therefore may find it. Most men are too busy in the course of a working day to make any advances to a girl in their employ. Besides, it's risky. If a girl invites attentions, which some men are only too ready to give, she has only herself to blame. It is always rather amusing to hear the stories some girls have to tell about the advances men make to them in the business world. If it is done, notice how the young woman dresses and conducts herself. That usually answers the question. One can always draw one's own deductions from stories of that kind and realize that the attentions are seldom proffered uninvited.

If when a girl answers an "ad" in the paper, she has behind her your organization—or, if you please, fraternity or union or syndicate—she need fear no man. That is her card of introduction. It establishes her professionally, morally and ethically. It does not take a group of girls long to discover how much interest a member has in her work and how well she does it—nor do they ponder long on her morals and her attitude toward her duties as an assistant. If an organization cannot make her give her best, cannot let her see her shortcomings and remedy them, then I should say she should no longer be a member. The dentists depend upon you to stand for the highest and best, look toward you for that, and if you fail them once, their interest is gone, their patronage omitted and their sponsoring put in other channels. You are a clearing house and means of identification and should save the dentist time and worry. It may mean more money out of his pocket, because higher standards mean increased wages, but in the end it means more money in his pocket through efficiency.

And, incidentally, you may function both ways. If some dentist wishes to be the forward kind, put him down in your books as such and keep your members away. He will soon change his tactics, and all will be better off.

To discuss the ethical side further, dress is such an important factor. Don't overdress by wearing pleasure cast-offs. Dress sensibly—which does not mean ugly blouses and hair pulled back tightly, for no one

likes to have an unattractive girl around, especially men; but it means simple, good clothes. It means that the hands and hair should be well taken care of. Your success depends on your personal appearance as well as on ability and experience.

Too many girls, when well established, settle down and are content to stay there. There is so much to learn about an office; newer and better methods of doing things are sure to be found. A dentist likes to have you take an interest, and suggestions made in a quiet and respectful manner may mean untold benefits to him. By making yourself more than a mere cog in the machinery you soon become an indispensable assistant, and your salary will increase with your ability and worth.

The girl who learns how to mind her own business and her employer's is the girl who will succeed. A dentist is more likely to trust a girl who attends strictly to business (which does not necessarily mean being a prig or snob) and one who is punctual rather than a girl who is always laughing and talking and who never volunteers to do anything more than is actually required of her. It may become tiresome to be constantly doing a little more than anyone else, to work harder and longer, but perseverance and application count.

A girl must love her work and go to it daily with a light heart and an eagerness to succeed which comes through keen enjoyment. If you love your work, it is half the battle; if not, the battle is lost before one shot is fired. To succeed, you must be sure of yourself, confident in your ability and appreciate your own worth.

Just one more thought along this line! Don't think, when you enter the business world, that it is merely to fill all the time between your school days and the seemingly halcyon days of matrimony which every girl believes are just around the corner. Every right-minded and affectionate-natured girl looks forward to and hopes to have a home of her own which it shall be her life work to keep and guide, but while working give to your job the best that is in you. You are being paid for definite work, and you owe it to yourself and your employer to give of your best to that job. No girl can definitely count on matrimony, and even if she could, life will mean more to her if she has done her job well. Too many girls take matrimony for granted, it passes them by and they find themselves later in life in a position little higher than the one they held at eighteen.

These, I say, all come under the ethics of your Association. They are the intangible principles which form the backbone of an assistant in her work. Through your group discussions, papers, clinics, and an interchanging of ideas with other State organizations, these principles can become a definite part in every assistant's life. Sometimes the shoe may hurt, but wearing it a while eases the pain, and where the group has power and authority no end of good may be done.

In closing, may I say a few words about the charm of fine manners. After all, the greater part of the waking day is spent in our offices, and we should therefore get the greatest enjoyment possible out of that time. As a dental assistant, you become a hostess in the reception room and a secretary between the patients and the dentists. The greatest writer upon manners in all literature, Emerson, says, "The power of manners is incessant—no one can resist their influence." And he gives this little hint: "There is no beautifier of complexion, or form of behavior, like the wish to scatter joy and not pain around us." Good manners is good behavior, which is the revealer of real character. One of the greatest charms in a young woman is modesty, one of the greatest blemishes is forwardness, boldness, pertness. One who speaks loudly and jokes and laughs, so that others beside her immediate companions may hear, has not learned the lesson of self-control. This lesson should extend to every department of her nature—her speech, her temper and her pleasures. It is easy to make slighting and gossiping remarks, but so hard to efface the painful effects of such hasty speech. A wild temper causes untold sorrow; better to bite our lips than repent later. So much is revealed in personal habits—a disorderly, untidy office-room speaks for itself and the assistant who is its keeper. Promptness in looking after patients and answering the summons of the dentist or the telephone means peace of mind for all. Cheerfulness, or a lack of it, establishes the atmosphere for the room. In conversations much can be gleaned—frequent attempts at wit such as punning and sarcasm soon wear the wrong way. No sarcastic girl can keep friends. And what makes you bristle more than the girl who laughs too much and too easily? And here comes that little word "tact." If a girl has a disposition to make people comfortable and happy by using a little forethought, she has a gem in her possession.

Fortunately, none of us is perfect. We should need no such organization as yours if that were true, because within your scope lies the opportunity to raise the standards and ideals of us all. If you were disorganized today, competition and opposition through lack of understanding would again be with us. We should have a house divided against itself, and it would fall. As it is, you have advanced with the times and by means of your alliance you all may become better members of society. Humanity is benefiting by the contribution you make.

701 Hume Mansur Bldg.

Togo's "Discursions"

Mr. Editor of Dental Magazine supplying such information in Digestible form.

Distracted Sir:—

First letter containing traces of Japanese intelligence contained slight outlines of efforts to continue along similarly harmless lines of ambidextrous cerebration.

First subject to receive astigmatic consideration is Dental Education and allied industries wherever located & discernible. This includes large area of territory Mr. Editor in which respect it bears striking family resemblance to all other questions at present before American people and other Suburban residents.

Education Mr. Editor are peculiar commodity. When totally absent it often ruins life in estimation of individual not possessing it & when present in excess quantities it produces similar unfortunate result in estimation of everybody else! Yet insatiable demands of life as produced by 20th Century unlimited living conditions requires education administered in startling amounts by people already having some if possible.

Important question reverberates in brains while considering this situation "When is an education appropriately sufficient in case of human beings?" Hon. Hawley Smith deceased educator who was 279 years ahead of remainder of class in this and several other branches of thoughtful reflections said following wisdom on this subject, "A man may be said to be educated when he has so developed the powers within himself that he can do well the thing which he undertakes to do."

Remarks of Hon. Smith deserving considerable thought will repay efforts in that direction, for ideas concealed in well formulated sentence agree with experiences enjoyed by all human beings while playing tag with this troublesome problem viz. namely to wit & as following: You yourself are completely familiar with individuals who have spent prolonged years & large amounts of money furnished by Hon. Papa or other distant relative to provide education of every shade & very shady yet when said expensive brain equipments were placed in operation on Great Highway of Life no dust was discernible as results of exotic speed attained. On other hand is frequently beheld case of benighted individual who became entirely separated from all so called educational institutions who receive money for doing it at diminutive age of 10-12 years yet brain growth progressed to unusual extent & success was overtaken at perhaps 11:30 A. M. in the morning of life. Question remaining unanswered are how shall occurrences similar to these be accounted for when they cannot be prevented? Complete an-

swer will be found in work on Human Species and other spores which is expected to be off Riverside Press in Spring of A. D. 2728.

In meantime Mr. Editor dental education is becoming classified with Summer Homes, Private Yachts, Racing Stables & other etc. obtainable only by bootleggers or other malefactors of great wealth. Yet consider following facts. First Boss experienced by me Mr. Editor were remarkable man who had learned practice of dentistry entirely by doing it either with or without consent of chair victims. School of life had taught this Hon. Boss with considerable wisdom & Univ. of hard knocks had offered chances for Post Graduates instructions in important branches of Selling Talks & other chin music of importance in department of revenue and social distinction. Large practice was ably served by unlettered man of native ability & shrewdness peculiarly adapted to dentistry while actually doing it.

On other hand all are familiar with sad results of bum finger work performed fluently by Dr. Theo. Rizer M.D. D.D.S. viz., etc. who has spent entire front ½ of lifetime in learning theories of how to perform dentistry without once having actually done so in first class manner for live human being equipped with tongue, salivary glands, nervous systems & other annoying appendages.

Costs of dental education are now more per each annual year than ever before & greater number of years are becoming required in which to administer complete treatment to youths undergoing same. Where is end of such condition to be looked for if ever?

According to legal situation in land of U. S. A. all males of human species are suffered to be painlessly detached from parent stem at age of 21 but devoted applications to flowery paths of professional study after male youth leaves Hon. High School will require that sap continue to flow in considerable abundance from family or other actively productive soil until advanced age of 25 to 30 years before professional man is capable of supplying own nourishment while consuming it.

Conditions disclosed in foregoing statement of incombustible facts are capable of causing enlarged feelings of uneasiness in all minds connected with subject and net results of lucid thought processes in conclusion of important mental reverberations are as following: Percentages of misfits encountered in any calling can be reduced but never completely eliminated by subtle veneer called Education.

Duck eggs hatched by Hon. Hen or high priced incubator continue to show 100% of offspring with webbed feet suitable to water navigation.

Hoping you are the same

Yours dejectedly,

Togo.

The Status of Dental Education

(This is the third and last of a series of articles from that portion of the annual report of the President of the Carnegie Foundation for the Advancement of Teaching which has to do with dental education. This part of the report deals with a subject which has been presenting itself to the minds of many dentists for a long time—recognition that dentistry is more than mechanics and that those who are to practice it with justice to the community and with credit to themselves must be trained in more than the arts. If dentists are to take their place beside physicians in the diagnosis and treatment of such ills as may have a dental origin or expression, and if such diagnosis and treatment are to merit the respect of the public and physicians, dentists must be trained in the sciences—and that means adequate preliminary training.

The report suggests necessary changes in pre-dental educational requirements and relates what the leading dental colleges have done to prepare themselves to impart what they consider proper training and what they require of students to prepare them to receive such training.—Editor.)

Primary Educational Needs of Dentistry as an Equivalent of an Oral Specialty of the Practice of Medicine

Development of the art of dentistry into the equivalent of an oral specialty of the practice of medicine would require a more comprehensive definition of dentistry, corresponding extension of the scope of dental health service, and commensurate improvement of dental education. Extended as it should be in biological scope and strengthened in all its health-service aspects, dentistry, then a learned profession, would be devoted, in broad terms,

(*a*) to establishment of the principles, and

(*b*) to application of all forms and degrees of scientific health service relating directly to the teeth and the closely adjacent oral tissues, and, indirectly through such service, to the welfare of other parts of the system and of the body as a whole;

(*c*) to establishment of the principles of correlation between dental or oral conditions and systemic diseases, with particular reference to observed effects of the latter on the teeth and the closely adjacent oral tissues;

(*d*) to detection, and provisional diagnosis, of dental or oral symptoms that indicate the prevalence or imply the probable existence of ill-health elsewhere in the body; and

(*e*) to suitable, supplemental, advisory health service, including consultation with the patient's physician, based on such observations (*c*) and diagnoses (*d*).

In this view of an enlarged dentistry, its practitioners would be trained to give the service not only of dental surgeons and dental en-

gineers as at present, but of oral sanitarians and oral physicians as well; and, instead of seeing only the teeth and mouth of a patient, as is now usually the case in a restricted view of their responsibilities, dentists would also suitably enquire into and keep careful records of the state of the patient's health, particularly as it affects or is affected by conditions of the teeth and mouth; would plan their operations to meet not only the local requirements but also the possibilities of systemic consequences as well; would also recognize and note the significance of all outstanding symptoms of disease, and would warn or advise the patient accordingly, or explain his need for a physician's attention; and could effectively discuss, with a physician, the oral condition of the patient in relation to his general welfare. The frequency with which dentists are, and will continue to be, consulted for oral health service gives to dentists particular opportunity and occasion to note not only the occurrence of oral and systemic diseases, but also the existence of correlations between them, and to help or guide patients accordingly.

The type of training afforded by most of the dental schools does not promise to make the practice of dentistry the health-service equivalent of an oral specialty of the practice of medicine, and important improvements in dental education are required generally for attainment of that objective. Appreciation by dental teachers of the necessity for thorough instruction in the mechanical aspects of the practice of dentistry has seldom been accompanied by due comprehension of the need for intimate understanding of the pathological involvements and of the health-service relationships of such practice. Instruction of dental students in the medical sciences, in most dental schools, has consequently been unwisely directed, indifferently given, and poorly assimilated; and the practice of dentistry has failed, from lack of knowledge, ability, and vision, to measure up to its opportunity to be the health-service equivalent of an oral specialty of the practice of medicine. Dentistry is based on a degree of pre-professional education—graduation from a high school or its equivalent—that is too weak to sustain the mental load of effective training in the medical sciences, on which, with the mechanical sciences, the equivalent of an oral specialty of medicine must be based. If the pre-dental educational requirement were raised to equality with that of the pre-medical—at least two years of appropriate work in an academic college—the necessary medical sciences and their applications could be taught to dental students as effectively as to students of medicine; and, if they were, current universal disparagement of dentistry as a practice that is intellectually and professionally inferior to that of medicine, and the attendant embarrassment of progress for dentistry, would be deprived of the facts on which they are based.

To make the dental practitioner an expert in reparative and reconstructive procedures—a good dental mechanic, in short—has been the paramount purpose of dental education, which has been primarily manual training. In the attainment of this important aim, a preliminary general education has been mistakenly regarded by dental leadership, with notable exceptions, as a subordinate qualification, which, while perhaps theoretically desirable, was practically unnecessary and apt, from the length of time required for its acquisition, to delay the beginning of dental study until a period in the age of the student when his capacity for active development in manual dexterity had become impaired or lost. Immaturity and ignorance, with hypothetically superior neuromuscular adaptability to digital training, have been preferred to relative maturity and wisdom, with greater degrees of understanding and capacity.

Owing to the prevalence of such distorted views, which have been a heritage from the days when dentistry was a mechanical trade, only twenty-two of the forty-three dental schools in this country required work in an academic college for admission in September, 1924, at least one year of such work having been first exacted effectually by fourteen schools in 1921, under the leadership of the Dental Faculties Association of American Universities. Very few practising dentists in the United States have been students in an academic college. Practically all of the graduates of dental schools in this country, including those of 1924, have been trained in institutions where the professional curricula were based on academic requirements ranging from nominal "possession of a good English education" to graduation from a high school. In 1925, however, all the graduates for that year from seventeen dental schools in this country, and, by 1928, the graduates of a majority of the schools, will have had at least one year of preliminary education in an academic college. This requirement for admission will be exacted by all Class A dental schools, beginnig in 1926; but it is possible that those of the Class B schools that may continue, after 1926, on a lower educational foundation, will have a majority of the whole number of dental students in this country, and that most of the graduates in dentistry for several years after 1930 will not have had the advantages of any portion of an academic college education.*

Medical education in this country has been based almost universally, since 1918, on an entrance requirement of at least two years of work in an academic college, including prescribed subjects of study, following graduation from a four-year high school. From present indications, it may safely be assumed that this pre-medical requirement will never

*At a meeting in November, 1924, the Dental Educational Council voted to include a year of work in an academic college, for admission, among the minimum requirements for its Class A or Class B rating of dental schools, beginning in September, 1926, thus making it certain that by 1930 practically all graduates in dentistry will have had at least one year of education in an academic college.

be reduced in length. All of the reasons for the adoption and retention by medicine of this minimal pre-professional requirement, after a four-year trial of a requirement of one year of work in an academic college, apply with equal force to early adoption of a two-year minimal requirement for dentistry as the oral division of health service. There is an additional reason: medicine, having tried the two-year requirement, retains it because it has found it to be essential for all classes of practitioners of medicine. Since that degree of preliminary education is concededly desirable for such medical specialties as oto-laryngology, rhinology, ophthalmology, and dermatology, it must be equally desirable for dentistry as an analogous mode of health service.

The foregoing views may be summarized in the general statement that dentistry is a highly mechanical division of the healing art, which has been closely organized independently of medicine; and, although not an accredited specialty of the latter, it is a division of health service, and should be extended in scope and improved sufficiently to make it equivalent to an oral specialty of the practice of medicine, either independently of medicine or as an accredited part of it. Among the important improvements that such expansion and betterment will require are deeper appreciation among dentists and physicians of the health-service function of dentistry; more effective teaching of, and education in, the medical sciences and their application both to prevention and to treatment; and a degree of preliminary education that would be equal to the minimum required for medicine.

Full attainment by dentistry of the character of an oral specialty of medicine appears to depend, also, upon general reorganization of the system of dental education on the basis of such readjustments and additions as these, which several of the best schools closely approximate in important respects:

(*a*) Requirement of at least two years of suitable pre-professional work in an academic college, including several courses that would stimulate interest and develop ability in, or reveal ineptitude for, the prospective practice of dentistry.

(*b*) Reorganization of the undergraduate curriculum in dentistry into three academic years instead of four, each lengthened, if necessary, to make that curriculum particularly effective for intensive and adapted training in the medical sciences, dental technology, clinical dentistry, and oral medicine, in preparation for the safe initiation, by the graduate, of competent *general* practice of dentistry. In this curriculum, the courses should be equal in quality to, and as far as possible interchangeable with, those in the corresponding subjects in the undergraduate curriculum in medicine; the degree of B.S. to be awarded at the end of the second dental year, or B.A. to students who completed three years of work in an academic college before admission; and the

professional degree, on graduation, to be that required for admission to the license examinations, which at present is D.D.S. or D.M.D.

(*c*) Addition of *elective,* full-year, graduate curricula, based on the three-year under-graduate curriculum and conducted on a high plane of scholastic quality, for the systematic and intensive training of all types of dental specialists, teachers, and investigators, with award of commensurate degrees, including M.A. or M.S. after at least one year of successful advanced work; and Ph.D. after at least two more years of such study and attainment in research.

(*d*) Establishment of combined dental and medical curricula, with suitable dispensary and hospital facilities, for united medical and dental training of specialists in oral surgery, public-health service, medico-dental research, and other fields on the border lines between dentistry and medicine, with award of academic and professional degrees in accord with the types of study concluded and the achievement therein.

(*e*) Provision of extension courses for practitioners, and of curricula for the proper training of oral hygienists and dental technicians.

(*f*) Active promotion of research, now almost non-existent in the schools of dentistry.

(*g*) Development of adequate library facilities, now conspicuously absent from most dental schools.

(*h*) Discontinuance of all independent dental schools or their conversion into schools for dental assistants, unless they should be sufficiently endowed, suitably affiliated, and properly equipped to promote satisfactorily the teaching of modern dentistry, which cannot now be claimed for them.

(*i*) Creation of additional dental schools in close affiliation with or as departments of schools of medicine in universities.

Such advanced conditions could not be established without increased financial support of dental education; but with adequate available resources the proposed improvements could and would be promptly effected by all of the important dental schools in this country and in Canada. A dental school cannot grow into the highest degree of educational quality, or into the greatest measure of humanitarian serviceability, from a financial soil consisting solely of the fees paid by students and patients, as is now expected of most of the schools. Although dentistry is a mode of universal health service, the public has done little to advance it. Endowments for the effective maintenance of the best schools of dentistry, and for cumulative improvement of their work, are urgently needed in the public interest. In this important respect dental education is identical with medical education; but, hitherto, in an era notable for the generous financial support deservedly accorded to medicine, the similar needs of dental health service have been almost wholly ignored.

Important Recent Advances in the General Status of Dental Education

The Regents of the University of Michigan and the Trustees of Marquette University have authorized their dental schools to require a minimum of two years of work in an academic college for admission, as soon as proper arrangements can be made; also to shorten the undergraduate curriculum to three years, and to establish full-year graduate curricula. Marquette instituted full-year graduate curricula at the opening of the present academic year, and will establish the new undergraduate curriculum in 1925. The dental schools of the University of Buffalo and McGill University have joined those of Columbia University and the University of Montreal in requiring at least two years of work in an academic college for admission. In 1926, the dental schools of the University of Minnesota, Washington University, and the New York College of Dentistry, will exact the same degree of preliminary education. The minimum requirement in pre-professional study for the practice of dentistry in the Province of Quebec is now two years of work in an academic college; it will be the same in the State of New York after January 1, 1926. In 1925, the work of the School of Medicine and Dentistry of the University of Rochester will be initiated on a minimum of three years of pre-professional work in an academic college.

The dental schools of the Universities of Cincinnati, Louisville, and Tennessee, and of Meharry Medical College, now require one year of work in an academic college for admission; in 1925, Cincinnati College of Dental Surgery, and the schools in Baylor, Georgetown, Temple, and Tulane Universities and in the University of Pittsburgh, all now on a high school foundation, will begin to require it; in 1926, it will be one of the Dental Educational Council's minimum requirements for a Class A rating. Each of the five dental schools in Canada is now on that basis, or requires two years.

Of the twenty-three Class A dental schools in the United States, fourteen now require at least one year of work in an academic college for admission; and of the twenty Class B, Class C, and unclassified schools, eight exact that minimum degree of pre-dental education.

Death of Dr. Gilbert

James F. Gilbert, M.D., D.D.S., for eighteen years a member of the Board of Examiners in Dentistry of Rhode Island, died from septic poisoning on July 2, 1925, in his forty-eighth year.

JAMES F. GILBERT, M.D., D.D.S.

His early education was received in the grammar and high schools of Woonsocket, R. I., following which he entered the Dental Department of the Baltimore Medical College in 1895. He was awarded the first honor for the highest standing in his class on graduation in 1898. For a time after graduation he was a member of the staff of his alma mater.

During his early practice he realized the importance of a medical education as a foundation for work in oral surgery and subsequently studied medicine, annexing the degree of M.D. He then continued with his extensive dental practice, specializing in oral surgery. Post-graduate courses in eye, ear, nose and throat were completed at the Harvard Medical School to aid him further in his work.

An ardent student of dental pathology, he purchased the copyright privileges of Barrett's *Dental Pathology* and had worked for the past few years upon rewriting this volume in order to bring it into line with the present-day ideas on this subject. This work was unfinished at the time of his death.

During the past few years he had advocated dentistry as a specialty in medicine and had expressed himself forcibly on this subject at recent dental meetings. He felt that this status for dentistry would surely come in the not distant future.

Appointed to the Rhode Island State Board of Registration in Dentistry in 1907, he continued his service without interruption up to the time of his death, holding the various offices of the Board during that time. In addition, he was chief oral surgeon, Woonsocket Hospital; member of the Woonsocket District Dental Society, Woonsocket District Medical Society, Rhode Island Dental Society; Assistant Surgeon, Department of Eye, Ear, Nose and Throat, Woonsocket Hospital. He was also a member of sectional and national dental societies.

Dr. Gilbert was widely known in all northern Rhode Island among both the profession and the laity. His practice was very large and included much operating in mouth and throat. In spite of this, he found time for interest in civic affairs, belonging to many local clubs. An untiring worker in his profession, he sacrificed his life by an accidental infection while in the performance of his work.

A man with tremendous energy, of kindly manner, sympathetic, and with a gifted pair of hands, he will be sorely missed by his large clientele, and particularly by the younger members of the profession, to whom he was especially helpful and considerate. Dentistry as a whole has lost a man of lofty ideals, whose effort at all times was to place dentistry on a higher plane.

The American Stomatological Association and the Stomatological Section of the American Medical Association

The official abolition of the Stomatological Section of the American Medical Association at the last annual meeting in Atlantic City is greatly to be regretted. Although this section has functioned for about forty years, its abolition has in no way affected the rapid development of stomatological activities in the United states.

Because of the discontinuance of the American Medical Association section, it leaves the American Stomatological Association as the only medical association which represents stomatological science in the United States. The Section of Stomatology of the American Medical Association was a member of the Association Stomatologique Internationale and thus had representation on the International Council. As a result of the abolition of the section, its members will be deprived of their affiliation and participation in international stomatology. Those members of the Stomatological Section of the American Medical Association who wish to retain affiliation with the International Stomatological Association are advised to communicate with Dr. Alfred J. Asgis, Secretaire-General-Adjoint of the Association Stomatologique Internationale, 33 West 42nd Street, New York City. At the June meeting in Paris the Association Stomatologique Internationale adopted two of the proposals submitted by the American delegation of the American Stomatological Association: (1) to admit to membership in the stomatological societies non-medically qualified dentists who accept the stomatological doctrine; (2) dentists who hold membership in stomatological societies will thus be afforded an opportunity to serve on the International Council and participate in the next International Stomatological Congress to be held in Paris in 1927, during the celebration of the twentieth anniversary of the Association Stomatologique Internationale.

The aim of the International Stomatological Association is: (1) to establish stomatology, or the care of the mouth and teeth, as a specialty of medicine throughout the world, to be ultimately practiced by medically qualified dentists, that is, stomatologists; (2) to enlist the cooperation of medically qualified dentists, non-medically qualified dentists, and medical practitioners to foster the stomatological idea for the protection of public health; (3) to invite dentists, with no medical qualification but who accept the stomatological doctrine, to join the stomatological societies of their respective countries.

The abolition of the Stomatological Section of the American Medical Association is not to be construed as a minimization of the importance

of stomatology among the specialties of medicine, but, on the contrary, it makes it clear, once and for all time, that a "Stomatological Section" must be differentiated from a "Dental Section." In an editorial of the August, 1925, issue of *Oral Hygiene,* Dr. McGee comments on this point. He says: "The stomatological section was a duplication of the surgical section of the American Dental Association and its disappearance will not in any way obstruct the science of stomatology."

We take this opportunity to call the attention of the medical and dental professions to the present status of stomatology in the United States and its differentiation from dentistry here as well as in Europe. Stomatology in Europe is a well-established specialty of medicine, and the Association Stomatologique Internationale has, as has been said before, functioned as a medical association for two decades.

ALFRED J. ASGIS, Sc.B., D.D.S., *Secretary,*
American Stomatological Association.

August 24, 1925.

DENTAL LAWS

Summary of Dental License Requirements Throughout the World

By Alphonso Irwin, D.D.S., Camden, N. J.

OREGON, U. S. A.

The Board of Dental Examiners consist of: President, F. W. Hollister, 583 East Broadway, Portland, Oregon; F. W. Haynes, Roseburg; D. B. Hill, Pendleton; W. W. Walker, Grants Pass; W. D. McMillan, Secretary, 407 Oregonian Building, Portland, Oregon.

The dental laws are dated 1887, 1899, 1905, 1913, 1919 and 1921.

The English language, dental supervision, registration and examination are required.

Usually June and December examinations are held in Portland or Salem; the time, place and all necessary details are announced prior to the date of the meeting by the Board of Dental Examiners; the examination fee is $25.00. All credentials must be in the hands of the Secretary of the Board fifteen days before the examinations.

Requirements: a diploma from a High School accredited by the University of Oregon, or its equivalent from an institution of equal standing, or a certificate signed by a State Superintendent of Public Instruction, and a diploma from a recognized dental college. Theoretical and written examinations are held upon the subjects taught in a standard dental college. The practical tests in operative and prosthetic dentistry are announced to the candidates on the day the examinations begin. No temporary licenses or interchange of dental licenses are allowed.

Registration with the County Clerk in each county where the dentist may locate, fee $1.00. Annual registration prior to April 1st, fee $5.00.

W. D. McMillan, *Secretary,*
407 Oregonian Building,
Portland, Oregon.

Oregon Dental Law—Effective May 24, 1921

Transcript. Sec. 8564. Any person desiring to practise dentistry

in the State of Oregon after this act takes effect shall file his or her name, together with an application for examination, with the secretary of the Board of Dental Examiners at least fifteen (15) days before the date set for the beginning of the examination, and at the time of making such application shall pay to the secretary of the Board a fee of twenty-five dollars ($25); furnish the Board with satisfactory affidavits of good moral character; shall present to said Board his or her diploma or satisfactory evidence of having graduated from a reputable dental school or college which must have been approved by said Board; shall also file with said Board his diploma or certificate of graduation from a high school accredited to the university of Oregon, or any other university of equal standing, or a certificate signed by a state superintendent of public instruction, or similar officer, to the effect that such applicant has had scholastic preparation equivalent in all respects to that demanded for graduation from a high school giving a four-year course of instruction in the state from which such certificate is issued; in lieu of such certificate or diploma from an accredited high school, such applicant may, and with like effect, furnish to said Board a certificate from the Board of Dental Examiners or similar official body of some other state of the United States, showing that such applicant has been a duly licensed practitioner of dentistry in such state for at least five years, and has had scholastic preparation equivalent to a high school giving a three-year course of instruction in the state from which the certificate is issued; provided, that said Board may admit to examination such other persons of good moral character as shall give satisfactory evidence of having been engaged in the practice of dentistry in the state of Oregon prior to the passage of this original act. No person shall be permitted to apply for examination who is not twenty-one years of age.

Said examination shall be elementary and practical in character but sufficiently thorough to test the fitness of the applicant to practise dentistry. It shall include, written in the English language, questions on any or all of the following subjects: Anatomy, histology, physiology, chemistry, materia medica and therapeutics, metallurgy, pathology, bacteriology, anesthesia, operative and surgical dentistry, prosthetic dentistry, prophylaxis, anesthesia and orthodontia, or any additional subjects pertaining to dental science. Said written examination may be supplemented by oral examination. Demonstrations of the applicant's skill in operative and prosthetic dentistry shall also be required. Said examination shall be conducted under oath or affirmation before said Board, and either member of said Board is empowered to administer the necessary oath or affirmation. All persons successfully passing such examination shall be registered as licensed dentists in the Board register, as hereinbefore provided, and also receive a certificate signed by the

president and secretary of said Board, in substantially the following form, to wit:

This is to certify that ..... is hereby licensed to practise dentistry in the state of Oregon. This certificate must be filed for record in the office of the county clerk of any county in which the party holding such certificate desires to practise, and it is unlawful for him or her to practise dentistry in any county in which said certificate is not filed for record.

Dated at ....., this ..... day of ....., 19....

ORKNEY ISLANDS

These islands lie off the northeast coast of Scotland. They have an area of 376 square miles and a population of about 30,000. They form a part of the British Empire. Hence the British colonial dental regulations are enforceable in these groups of Islands. For other information consult the British Empire.

PALESTINE

I. A dentist, before he may practise his profession in Palestine, must obtain a Government License.

Sec. VI. Licenses to Medical Men and Others. No person shall exercise the profession or calling of a Physician, Surgeon, Dentist, Midwife, Pharmacist or Druggist unless he has previously obtained a license to be granted by the Public Health Administration.

A license may be cancelled at any time on the recommendation of the Administration, and a person whose license has been cancelled shall have no right to compensation.

The following fees shall be for the issue of licenses: For the license of a Physician, Surgeon or Dentist L.E. 2. For the license of a Pharmacist or Druggist L.E. 1. For the license of a Midwife P.T. 25. The license of a Physician or Surgeon shall be taken to include a license to act as a Pharmacist.

A person exercising any of the aforesaid professions or callings in contravention of this section shall be liable to a fine not exceeding L.E. 5, or imprisonment for a period not exceeding one month, and in the case of a second offence to a fine not exceeding L.E. 50, or to imprisonment for a period of not exceeding six months.

II. Section VI of Public Health Ordinance No. 1, dated 16th May, 1918, refers to the practice of Dentistry.

III. A Dental Ordinance is under preparation. It will restrict unqualified practice and regulate the profession of dentistry in Palestine.

IV. No Dental Hygiene Act exists in Palestine.

V. As there is no School of Dentistry in Palestine, reciprocity cannot be given, but foreign diplomas are recognized in the case of persons who have followed a course of dentistry for at least three years, and who have obtained the diploma of a recognized School of Dentistry.

VI. The American University, Beirut, Syria, has the nearest Dental School.

Verified Sept. 11th, 1924.

PANAMA, C. Z.

Executive Order of the President of the U. S. A.

It shall be unlawful for any person to practise or to attempt to practise Medicine, Surgery, Dentistry, Pharmacy, or Midwifery within the Canal Zone without first having obtained a license therefor from the Board of Health of the Canal Zone.

No examination is given to applicants for license to practise dentistry, but they must present, in person, diploma from a recognized dental school, and satisfactory credentials as to character. A fee of $5.00 is charged for the license.

It may be stated the Panama Canal employs a number of district dentists, without salary, and there is, therefore, practically no field for private dentists on the Panama Canal Zone.

Verified April 17th, 1925, by W. P. Chamberlain, Chief Health Officer, Balboa Heights, Panama, Canal Zone.

PANAMA REPUBLIC (Central America)

The last dental act was passed in the Republic of Panama, August 7th, 1918.

All applicants for a license must possess a diploma from a reputable dental college and pass an examination. Spanish is the language used.

Examinations are held at Panama, the first Board meetings being during the month of January, and the second sessions during the month of July. The subjects of theoretical examinations are Anatomy, Physiology, Chemistry, Therapeutics, Metallurgy, Histology, Pathology, Bacteriology, Anesthesia, Oral Surgery, Operative and Prosthetic Dentistry.

The examinations consist of demonstrations in any dental operation.

Non-graduates are not examined.

Fee $70.00, U. S. A. currency.

Temporary licenses are allowed by any member of the Dental Board of Examiners after the regular meetings to the next regular session.

Panama does not interchange dental licenses.

Address Junta Nacional de Higiene, Panama, Republic of Panama, or Luis F. Sanches, Secretary, Avenida B, No. 24-c, Panama City, Panama.

PRACTICAL HINTS

This department is in charge of V. C. Smedley, D.D.S., and George R. Warner, M.D., D.D.S., 610 California Building, Denver, Colorado. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to them.

NOTE—Mention of proprietary articles by name in the text pages of the DENTAL DIGEST is contrary to the policy of the magazine. Contribution containing names of proprietary articles will be altered in accordance with this rule. This Department is conducted for readers of the DENTAL DIGEST, and the Editor has no time to answer communications "not for publication." Please enclose stamp if you desire a reply by letter.

Editor Practical Hints:

Having seen your answers to inquiries made by other dentists which are always interesting and instructive, I thought I would submit for your consideration the case which has come into my practice, as follows:

A female child, 13 months old, began to cut her temporary incisors at the age of 8 months, but as yet very little of the crown has come through the gum, and that which has come has no enamel, but is of a dark coffee-jelly color.

It is reported that her father's teeth had no enamel and had to be extracted early in life, and has since been wearing two dentures.

This child appears to be healthy and is fed mostly on cow's milk with lime water at times or milk of magnesia.

Could you advise me if there is anything we can do at this time that would be likely to help the formation of enamel on the other temporary teeth, and also on the permanent teeth?

It occurred to me that if there was any help for it, now is the time to take it in hand.

H. M. McD.

ANSWER.—The denuded teeth should be treated with silver nitrate until they are well covered (thoroughly blackened), which treatment should be repeated every four months.

To the diet of milk should be added the juice of two or three oranges every twenty-four hours. The orange juice should be taken about an hour before the milk. The child should also have some fresh vegetable juice each day. Mash lettuce, celery, raw cabbage, raw spinach and raw carrots, separately or in any combination; strain off

the juice and feed the child about two tablespoonfuls before the midday feeding of milk.

See that the child has about eight ounces of water during the day. Allow it no commercial sugar.

This regime will not only do the most we know of to insure good teeth, but is the best diet for general health.

The hereditary influence may nullify any efforts toward aiding nature in supplying the child with normal permanent teeth, but you may feel in your own mind that you have offered advice that would ordinarily give the desired result.—G. R. WARNER.

Editor Practical Hints:

I am in need of some authoritative information regarding the following question: What would be the result on the tissues and the teeth, if the inferior dental nerve were destroyed?

I would appreciate very much if you would quote some authorities on this question.

DR. M. K.

ANSWER.—In your question you say "if the inferior dental nerve were destroyed?" I can't imagine the entire inferior dental nerve being destroyed without concomitant destruction of the adjacent tissues and probably teeth, as might occur from an osteo-sarcoma, gun shot wound, or some other form of accident. In these cases your question would be answered, so I am going to assume that you mean, "What would be the result on the tissues and teeth if the function of the inferior dental nerve were destroyed?" I suppose you are thinking of the nerve being injured or severed in operative procedures, disease, or intentionally severed or injected with alcohol for the relief of pain.

I will first quote cases out of my own practice. Case 1, Mr. S., age 60, developed an epithelioma on the lingual aspect of the alveolar ridge on the right half of the mandible. We treated it with the actual cautery under nerve block anesthesia which cured the epithelioma, but the pain which existed before the cauterization grew worse. We decided to resect the inferior dental, which we did at the angle of the jaw, taking out about three-quarters of an inch of the nerve. The pain ceased almost entirely without returning during the balance of man's life, which was about ten years. There was no perceptible change in the tissues or teeth except in the matter of sensation.

Case 2, Mrs. W., a lady about 60 years of age, developed severe pain in right side of mandible. The teeth were out back of first bicuspid and those which remained were sound and responded normally to ice test. After using novocaine nerve block to test control of pain, alcohol

was injected with resulting stoppage of pain, but in the three years since there has been no other perceptible effect upon the tissues.

Case 3, Miss X, a lady about forty years of age had a pulpless mandibular third molar which was to be removed under a general anesthetic. It proved to be pretty thoroughly ankylosed and resisted the usual methods of removal, so the surgeon used a surgical bur to cut out the tip. During the operation the bur slipped several times and tore through the tissues in and about the inferior dental canal, with a resulting anesthesia of the tissues of the mandible but no objective symptoms to be observed.

On page 136 of Cryer's Internal Anatomy of the Face is the report of an experiment on a dog which would tend to prove that destruction of the contents of the inferior dental canal would have no detrimental effect on the tissues of the mandible.

Brophy says, "Operators with large experience in the use of alcoholic injections find that no unpleasant effects occur after the treatment."

It is common experience that while the teeth are unesthetic as a result of injecting the inferior dental nerve with alcohol, or severing it intentionally or accidentally, their nutrition and function are not interfered with.

I have no other authorities at hand, but I trust that the foregoing, together with your knowledge of the anatomy and physiology of the fifth nerve, will answer your questions.—G. R. WARNER.

Editor Practical Hints:

My wife has been troubled with canker sores in the mouth for past years. I have tried everything I could think of. Can you suggest anything? If so, please advise, and oblige

F. E. M.

ANSWER.—For the relief of the canker sore there is nothing like saturated solution of tri-chloracetic acid applied with the point of a wooden toothpick wound with a few shreds of cotton. Use this as soon as the canker is noticed by the patient, following with applications every day or alternating days. Then put the patient on a restricted diet, decreasing the amount of carbohydrates and proteins, i. e., decrease the amount of meat, sugar and starches; increase the amount of the vegetables low in starch content, green vegetables and fruits. This treatment has proven effective in a number of cases.—G. R. WARNER.

Editor Practical Hints:

Many years ago an amalgam filling was placed in the lower left first molar of my mouth. In 1917 it was removed on suspicion and we found the tooth extensively decayed, almost to the pulp. A cement

base was put in and a beautiful gold inlay cemented to place. For a time this tooth was very sensitive to cold, but gradually seemed to improve.

About two years ago this molar became so sensitive to hot or cold that I found it necessary to remove the inlay. Most of the sedative pastes and compounds on the market were sealed in one after the other, with cement. As long as the cement remains intact the tooth is comfortable. However, there is one place on the occlusal surface, the cavity being a disto-occlusal, where the cement cannot remain long because it is so thin. And it is the only place where I cannot stand the use of a bur or instrument, otherwise the cavity surfaces are not sensitive. A strong mixture of silver-nitrate and carbo-eugenol has been used on this spot, but without any perceptible improvement.

Finally I had amalgam put in until we could come to some conclusion as to what is the best thing to do. At present any food or liquid above body temperature produces a severe toothache for about one minute or so, and if something cold is put on the tooth at once the ache subsides quickly, although a piece of ice or ice cream will produce a slight sensation of pain.

Knowing the train of evil consequences following pulp removal, and the imperfection of our present-day system of root canal therapy, I am extremely anxious to save the pulp of this tooth, and will willingly try anything you may suggest.

I am enclosing a radiograph of the tooth taken today in my own office by an Adams machine, six-second exposure, and developed five minutes in Eastman solution. I have had my assistant take eight pictures of the molar and these two are the clearest. They are not as good as my average radiographs. I do not know why, can you tell me?

My age is 33 years and weight 150 pounds, and am in very good health.

P. H. McK.

Answer.—Replying to the last part of your question first, both of the radiograms submitted are defective, from the fact of the angle at which the ray entered the film being wrong. The ray should enter the film at a perpendicular on the horizontal plane, so that the contact points will not overlap, then the details of the periodontal membrane and lamina dura show up very clearly. The film on the right is overexposed. One hundred milliampere seconds with a target film distance of fifteen inches will give you about the right exposure for the lower molar area. Now as to this molar, even though the details of the radiogram are not as good as they should be, it shows very clearly that there is condensing osteitis around the distal root. The location of this condensing osteitis would indicate that it is caused by infection,

therefore I should say that you have an infected vital pulp in that tooth, and from the extent of the condensing osteitis I would think that the pulp has been infected for some considerable time. It is very doubtful that you will ever be able to overcome this infection; however, it is worth trying and our method is as follows: First make a mandibular injection of novocaine and then remove every vestige of carious dentine even though it involves an exposure of the pulp or an amputation of the horn of the pulp. Following this operative procedure wash the cavity with tepid water, dry out with bibulous paper and cover with a sedative cement of the following formula: Eugenic acid, thymol, iodine, oxide of zinc, and bismuth sub-nitrate, then cover this with an oxyphosphate of zinc cement and await results. If the results are favorable, and I would wait a month or two if they seem to be favorable, I would remove as much cement as necessary to provide for a gold inlay. You notice I said to wash out the cavity with warm water, this is done because alcohol is contra-indicated near or upon an exposed pulp.

If you should lose the pulp I would cleanse the canals carefully under surgical asepsis and after they are thoroughly clean and enlarged sufficiently to make the introduction of a root filling mechanically possible I would use the Howe silver nitrate method and then fill the canals by the Callahan method, being very careful in the entire procedure not to penetrate the apices.

I would be pleased to hear the outcome of this case.

—G. R. WARNER.

Editor Practical Hints:

Would you kindly give me your opinion on the following case:

Patient, male, age 28. Gives history of spontaneous bleeding along intestinal tract. Cause unknown. Physicians claim he is not a hemophiliac. Teeth in good condition, but marked recession of gums, especially labially and buccally. What is the cause of recession, and what treatment would you advise?

J. G.

ANSWER.—The cause of the recession of the gums is probably periodontoclasia. The crest of the alveolus, which supports the overlying soft tissues, has been resorbed. This resorption may be due to calcareous deposits, tooth brush abrasion or traumatic occlusion, or to all three. Therefore, the treatment indicated is a careful, thorough removal of all deposits and a polishing of the cervical margins of the teeth, the relief of traumatic occlusion and the institution of the Chartres system of brushing.—G. R. WARNER.

CORRESPONDENCE

CAN YOU BEAT IT?

Boston, Mass.

Editor Dental Digest:

The writer was called in consultation at the Cambridge Hospital, Cambridge, Mass., November 17, 1922. Patient, baby two months premature, born November 4, 1922.

History: November 6, white spot noticed on lower gum which gradually became larger until a well formed crown of a tooth erupted. Baby refused food, failed to gain in weight and was apparently in great discomfort. Tooth extracted November 17.

Please enter me in your contest for youngest patients.

FREDERICK A. KEYES.

Philadelphia, Pa.

Editor Dental Digest:

In the July issue of THE DIGEST there is the question, "Are there any left-handed dentists?"

It may be interesting to J. W. B. to know it is not very unusual. The late Dr. Henry Register was ambidextrous; he had two engines, one on each side of his chair. I have seen him at work and it apparently made no difference which hand he was using or on which side of the chair he stood.

J. HOWARD GASKILL.

Chariton, Ia.

Editor Dental Digest:

In the July issue of THE DIGEST, under correspondence by J. W. B., I find an inquiry as to the left-handed members of the dental craft. I happen to be so blessed, possibly more so than the right- or left-handed ones, as I have the great good fortune to be able to use either hand, can work on the left side of the chair as well as on the right side, and can use any instrument with equal dexterity with either hand. It is a great convenience in many cases to be able to work on either side; and as to the engine, cuspidors, etc., I do not see that they interfere in any way.

In extracting, if extracting on the right side, the left hand is used, and if on the left side, the right hand. I should like, as suggested, to see a list of the fortunate ones, as I believe we are more fortunate

than the ones who are simply one-sided and should like to know of others who can use either hand with equal dexterity.

W. A. Suthers, D.D.S.

Editor Dental Digest:

In your July edition J. W. B. wished some information as to the equipment, remarks of the patients, and hardships that a "port-sider" or "southpaw" dentist might meet with.

Three per cent of dentists are left-handed.

My equipment consists of a large left-handed unit and a left-handed chair. There must be quite a demand for left-handed equipment or the manufacturers couldn't afford to make it.

The only remarks that my patients have made are when I was writing. A visiting dentist notes the difference at a glance.

My main trouble is with extracting forceps, which I have overcome by using straight handles.

J. B. D., "A South Paw."

East St. Louis, Ill.

Editor Dental Digest:

In the July issue of The Dental Digest I noticed a letter from J. W. B. inquiring in regard to left-handed dentists. In reply will say that I operate with both my right and left hands.

When I attended dental college I was naturally left-handed, but the supervisor of the infirmary refused to allow me to operate with my left hand and, as a consequence, upon graduation I was able to use my right hand without any inconvenience.

After opening my office, I discovered that when operating on the left side of the mouth I could step to the left side of the chair and work much more easily than I could by reaching across the patient.

The cuspidor can be pushed slightly forward when operating on the left side, and I experienced no trouble with the engine hung in the regular manner.

Regarding remarks made by patients, less than 1% ever say anything about it, and those who do have no trouble in seeing the advantage of being able to operate on the left side, as it eliminates leaning across the patient and gives the operator a clearer vision of the field to be operated on.

I have practised dentistry for sixteen years and believe I have a slight advantage over the practitioner who is limited to the use of his right hand, as I can use either hand.

I, like J. W. B., do not recall ever having met any left-handed dentists.

F. G. Smith.

Visalia, Calif.

Editor Dental Digest:

I am sending you a lower right first molar having three roots which I extracted.

MYRON J. KOOBATION, D.M.D.

Garden City, Kansas.

Editor Dental Digest:

I am sending two teeth, the kind we do not often see—one lower third molar, right, and one lower cuspid, left.

These were both taken out of the same mouth a couple of months ago.

L. W. HOPKINS.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All questions and communications should be addressed to Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42nd Street, New York City.

I should like to know what will take off tarnish and water stains of old standing from the sterilizer and water heater. I have tried silver polish, but it does not take off the stains or make a high polish.

Is it proper to do cleaning, such as sweeping and mopping, during office hours? NORTH DAKOTA ASSISTANT.

Tarnish and water stains that have been long neglected are very difficult to remove. I suggest the use of a good metal polish vigorously applied. Coarse polishing materials will remove the nickel plating, and if acids are used I fear that more harm will be done than good. If the stains have reached the point of corrosion, the parts should be renickeled, then with everyday care they can be kept in good condition. It is not the quantity of polish used that keeps nickel bright, it is constant and careful attention; apply as little polish as possible and polish briskly with soft dry cloths. A few minutes each day will accomplish better results than one big cleaning bee once a week.

Cleanliness in a dental office is all important. Just when the sweeping and the mopping should take place depends upon circumstances, but to do them when patients are present is highly improper and indicates a lack of coordination in the working plan of the office. If these duties come within your care, I suggest that they be attended to early in the morning or after the patients have gone for the day. You can arrange the appointments of patients so that there will be time for this essential detail if it must be cared for within the limit of office hours. It can also be planned to coincide with the time that the doctor must spend in the laboratory, or at such time as he is out of the office. A dental assistant's gown should always be spotless and house cleaning is not conducive to an immaculate appearance—a further reason why sweeping and mopping should be done when there are no patients in the office.

Light dusting, such as is necessary to be done several times a day in some offices, can be taken care of at odd moments and without display. Keeping the office sweet and clean should be the prideful purpose of every dental assistant, even though it means personal attention. There is no disgrace attached to honest labor well performed, but there is much to be said against a dental assistant who thinks herself above performing certain duties required of her, no matter what these may be. Loyal service is the finest expression of true worth.

Telephone Courtesy

Many times a day it is necessary for me to answer the telephone or use it in the carrying on of the daily routine of my office, so perhaps it will be of interest to dental assistants to bring to their attention some of my observations. In the modern business world the telephone has grown to be one of the greatest conveniences and time-savers and its use is so universal that it behooves us to follow certain details if the best results are to be obtained.

In making a call it is well to be sure that you have the correct central and number, which should be given to the operator in a clear distinct voice, but not too loud. Incidentally, telephone operators are human, and should it be necessary for you to repeat your call, do so in a pleasant tone of voice. The words "please" and "thank you" are not amiss when occasion requires—they are really appreciated even by telephone operators. In using the dial system special care must be exercised in calling the right number.

When the party you are calling replies, it is well to say "Dr. Blank's secretary speaking," then proceed with your message, stating it as briefly and as concisely as possible. Nothing is more unpleasant than to hear a curt "HELLO" spoken in a tone which implies annoyance or rudeness. No dental assistant should ever use the word. It is not in harmony with the good breeding and courtesy which should always be associated with a reputable dental office. How much more pleasant it is to hear a well modulated voice saying "Dr. Blank's office." Where the telephone is used jointly, as is the case in offices where there are several dentists, it is quite proper to reply by giving the telephone number; the person calling thereby being assured that he has the right number can proceed at once with his message for the particular doctor he wishes to reach.

When calling dental offices, it has been too often my unpleasant experience to hear that curt "HELLO" in reply, supplemented by "Wha'da'ya'want?" and further on in the conversation by repeated "yea's" or "I don' know," instead of "Yes, Miss Pierce" or "No, Miss

Pierce" or "I will see, Miss Pierce." I could not help wondering how the doctor could tolerate such a glaring fault in his assistant and what the reaction was on the patients who called the office each day, not to speak of those who were in the office "listening in."

Tact, courtesy and patience are valuable qualities to possess when using the telephone, even when upon answering the impatient ringing of the bell while in the midst of some particular task you find that the caller has been given the wrong number. The person calling will be impressed with your manner and, who knows but that your courtesy may lead him to seek your office and become one of the doctor's most valuable patients? Stranger things than that have hapened.

ELSIE PIERCE.

October Meeting

OF

EDUCATIONAL AND EFFICIENCY SOCIETY FOR DENTAL ASSISTANTS, FIRST DISTRICT, NEW YORK, INC.

The October meeting of the Educational and Efficiency Society for Dental Assistants, New York, will be held at the Academy of Medicine, 17 West 43rd Street, New York City, on Tuesday, October 13, 1925, at 8 P. M.

The Program Committee announces an interesting program. In arranging programs for the regular meetings of the Society, the committee endeavors to present each evening two speakers, one as essayist, a prominent member of the dental profession, and another speaker, usually a well-known club woman. This policy was instituted with the belief that the presentation of the views of a speaker who is familiar with the work of women in other spheres of professional and business life, as well as those of a speaker associated with the daily activities of the dental assistant, would produce a broader vision and finer ideals in the minds of the members of the Society. The many successful meetings in the past have justified the plan.

The Society will continue its classes in roentgenology, laboratory technic sterilization, parliamentary procedure, and office organization. These classes are usually held on one evening each week and are so arranged that they do not coincide, thereby giving the members an opportunity to attend several during the season without the attendance and any incidental study interfering with regular duties, yet increasing their knowledge and efficiency. This work has always met with great approval and the sessions have been so well attended that plans are being formed to add courses in first aid and care of dental equipment.

The Clinic Club has resumed its meetings on the third Monday evening of each month at 7:30 p. m. at the office of Dr. W. Short, 342 Madison Avenue, New York City. All members of the Society are eligible to join and are welcome at each meeting, when a different phase in the work of the dental assistant is demonstrated.

The Society meets on the second Tuesday evening of each month, October to May, inclusive, at the Academy of Medicine, New York City. A cordial invitation to attend is extended to the members of the dental profession and to their assistants.

Dental assistants who are actively employed in the conduct of ethical dental offices are urged to join. The Society offers many opportunities to gain the advantages arising from association and cooperation with others striving toward the mutual goal of more efficient service to the dental profession and the establishment of higher standards of service and efficiency in the practice of dentistry. Regular attendance at meetings and participation in the study courses act as a stimulus to a better performance of the routine duties of dental assisting as well as afford a wider development in the personality and the character of each member. Kathleen Scanlon, Chairman of the Membership Committee, 342 Madison Avenue, New York City, will be glad to furnish any further details.

Name, Please

If C. T., who wrote on August 11th asking for information about a school for dental hygienists, will send in her name and address, the information will be forwarded to her.

EXTRACTIONS

No Literature can have a long continuance if not diversified with humor—ADDISON

An ode to the antiquity of microbes:
Adam
Had 'em.

"This check is doubtless all right," said the cashier politely to the blond girl who presented it, "but have you anything about you by which you could be identified?"

The girl looked somewhat confused, but finally said, "Yes; I have a mole on my left knee."

(Charlie)—Is that a particular friend of yours you just spoke to in passing?

(May)—Yes, in a way.

(Charlie)—Why don't you ask him to join us, then?

(May)—Oh, this is so sudden! He's the new minister.

The man who says he runs things at his house may mean the washing machine and vacuum cleaner.

"Ever heard this one?" asked the traveling salesman of the group in the hardware store. "A dog was tied to a rope about 14 feet long. Twenty feet away was a fat, juicy bone. How did the dog get to the bone?"

"Oh, that's old," answered a clerk. "You want one of us to say 'I give up,' and then you'll say, 'That's what the dog did.'"

"No, you're wrong, for the dog got the bone."

"Well, how did he get it?"

"The other end of the rope wasn't tied."

One of the essential things you can't say with flowers is:—"Sit down in front."

A widower came home from his office one evening and as soon as he stepped into his apartment he noticed something was missing. He called his colored housekeeper and asked her if she had seen a bronze urn which had been on the mantel.

"Bronze urn?" repeated the gamboge menial. "Oh, youall means dat ole tin vase wid all de cigarette ashes in it. Yas, sur. I knows about dat. Ah flung dem ashes out in de ash can and put dat vase in the cubboard."

"My God," gasped the man, "that was my wife."

(Golfer)—Doctor, you remember you recommended golf to take my mind off my work?

(Doctor)—Yes.

(Golfer)—Well, can you prescribe something now to get it back again?

It isn't yet time to worry about her if she'd rather climb trees than read about movie people.

(Chief of Police)—What! You mean to say this fellow choked a woman to death in a well-lighted cabaret in the presence of over a hundred people, and nobody interfered?

(Cop)—No, Cap, everybody thought they were dancing.

Weary Willie slouched into the pawn shop.

"How much will you give me for this overcoat?" he asked, producing a faded but neatly mended garment.

Isaac looked at it critically.

"Four dollars," he said.

"Why," cried Weary Willie, "that coat's worth $10 if it's worth a penny."

"I wouldn't give you $10 for two like that," smiled Isaac. "Four dollars or nothing."

"Are you sure that's all it's worth?" asked Willies.

"Four dollars," repeated Isaac.

"Well, here's your $4," said Weary Willie. "This overcoat was hangin' outside yer shop, and I was wonderin' how much it was really worth."

(Sign on an Italian restaurant in New York)—If your wife can't cook don't divorce her—keep her as a pet and eat here.

Another summer is over and all over the country frazzled citizens are staggering back to work in the hope of getting a much needed rest.

It is the inalienable privilege of every man and woman in America to sleep from two weeks to three months in a hard bed, get bit by a snake, fall down a well, fight malaria, sit on a hotel porch full of dull strangers and tip bad waiters handsomely for serving cold soup. This is known as a "vacation."

FUTURE EVENTS

THE MASSACHUSETTS BOARD OF DENTAL EXAMINERS will hold an examination for registration for both dentists and oral hygienists in Boston, Mass., October 7-10, 1925. Full information, application blanks, etc., may be obtained at the office of the Secretary, Room 146, State House, Boston. All applications must be filed at the office of the Secretary at least ten days before date set for said examination.

JOSEPH N. CARRIERE, *Secretary.*

THE OHIO STATE DENTAL BOARD will hold its fall meeting at Columbus during the last week in October, 1925, beginning on Monday, the 26th. For further information write to the secretary, Ray R. Smith, D.D.S., 327 East State Street, Columbus, Ohio.

THE FLORIDA STATE DENTAL SOCIETY will hold its annual meeting at Orlando, Florida, October 29-31, 1925.

H. G. Bow, *Secretary,*
Deland, Florida.

THE CONNECTICUT DENTAL COMMISSION will meet in Hartford, Conn., November 17-19, 1925, to examine applicants for license to practise dentistry and dental hygiene, and to transact any other business proper to come before it.

Attention is called to Chapter 95, Section 2900, amended as follows: "After July 1, 1925, every applicant for such license shall also present a certificate from the State Board of Education that he has completed a four year course at an approved high school, or has an equivalent academic education, provided this requirement shall not apply to an applicant who shall have had at least three years' continuous practice as a legally qualified dentist, or shall have been a registered assistant in this state." This act shall take effect from date of its passage.

For further information apply to Arthur B. Holmes, D.D.S., Recorder, 43 Central Avenue, Waterbury, Conn.

The next semi-annual meeting of the COLORADO STATE BOARD OF DENTAL EXAMINERS will be held in Denver commencing December 1st, 1925, and will continue for five days.

For further information address: Wm. H. Flint, D.D.S., Secy., Littleton, Colo.

THE NEVADA STATE BOARD OF DENTAL EXAMINERS will hold their next examination at Reno, beginning Wednesday, December 9th, 1925.

All applications must be filed with secretary not later than December 2nd, 1925.

G. H. MARVEN, D.D.S., *Secy.*